County of
Los Angeles
Department of Public Works

May 2004

Final

Program Environmental Impact Report
Sun Valley Watershed Management Plan

SCH No. 2002111051

MWH

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

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MWH
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Section 1
Executive Summary

This Final Program Environmental Impact Report (Program EIR) presents the results of an analysis of the environmental effects of the Sun Valley Watershed Management Plan proposed by the County of Los Angeles Department of Public Works (LACDPW) as CEQA Lead Agency. The agency and public comments received on the Draft Program EIR and responses to these comments are presented in **Appendix H**. The Watershed Management Plan is a multi-purpose flood control program to solve the local flooding problem in the Sun Valley Watershed area while increasing water conservation, recreational opportunities and wildlife habitat, and reducing stormwater pollution. Implementation of the Watershed Management Plan will include construction of various stormwater facilities within the watershed, both small and large-scale, including those for retention and/or infiltration, conveyance, and distribution for reuse.

1.1 BACKGROUND

The 4.4 square-mile Sun Valley Watershed is not currently served by any comprehensive underground storm drain system, and is faced with a critical need to solve frequent flooding problems. In the late 1980s, construction of storm drains was proposed but was not implemented due to lack of funding and community support. LACDPW then worked with the Sun Valley Watershed Stakeholders Group to develop a multi-purpose Watershed Management Plan. Formed in 1998, the Stakeholders Group consists of area residents, state and local agencies, and local businesses and environmental groups. The mission of the Stakeholders is:

> *"…to solve the local flooding problem while retaining all stormwater runoff from the watershed, increasing water conservation, recreational opportunities, and wildlife habitat, and reducing stormwater pollution."*

1.2 PROJECT OBJECTIVES

The objectives of the Sun Valley Watershed Management Plan have been developed by LACDPW based on the mission statement of the Stakeholders. The primary objective is to reduce local flooding in the project area. Secondary objectives are: increase water conservation, increase recreational opportunities, increase wildlife habitat, improve water quality, provide additional environmental benefits (e.g., energy conservation, air quality improvement, and solid waste management), and increase multiple agency participation.

1.3 PROJECT LOCATION AND ENVIRONMENTAL SETTING

The Watershed Management Plan is comprised of multiple components located throughout the Sun Valley Watershed. Located approximately 14 miles northwest of downtown Los Angeles, the study area is near the intersection of Interstate 5 and State Highway 170 (**Figure 1-1**). The watershed is approximately 4.4 square miles in area and encompasses the communities of Sun Valley and North Hollywood, City of Los Angeles.

Located in northeastern San Fernando Valley, the watershed area is bounded to the north by the San Gabriel Mountains, to the east by the Verdugo Mountains, to the west by the Simi Hills and to the south by the Santa Monica Mountains. The San Fernando Valley is a broad, flat, alluvium-filled basin that trends east-west. The project area is located on the Tujunga alluvial fan, which begins at the northeast corner of the San Fernando Valley where the Little and Big Tujunga drainages originate from the San Gabriel Mountains (near the eastern edge of Hansen Dam). Significant surface water features are not present in the watershed. The watershed drains to the Los Angeles River and eventually to the Pacific Ocean. The watershed overlies the eastern portion of the San Fernando Groundwater Basin, an unconfined aquifer composed of alluvial deposits.

The project area is highly urbanized and includes industrial, commercial, and residential land uses but supports a few remnants of native vegetation or wildlife habitat. Land uses at the northern and northeastern end of the watershed are primarily open space and low-density residential, including Hansen Dam Golf Course, Stonehurst Park, Stonehurst Elementary School, and the surrounding residential neighborhood. The remaining area in the northern watershed (north of the intersection of Tuxford Street and San Fernando Road) is dominated by industrial uses. These include exhausted gravel pits used as landfills for inert construction debris (Cal Mat Pit) or gravel washwater disposal (Sheldon Pit), a municipal landfill (Bradley Landfill), a power generating facility (City of Los Angeles Department of Water and Power (LADWP) Valley Steam Plant), Vulcan Gravel Processing Plant, and various auto dismantling operations. The Hansen Spreading Grounds are located outside of the watershed and immediately northwest of the Valley Steam Plant.

The southern portion of the watershed, located south of the Tuxford-San Fernando intersection, is primarily developed with low to medium density residential uses. Some industrial uses, including an inert landfill (Strathern Pit), are located north of Strathern Street as well as along Burbank-Glendale-Pasadena Airport, which is adjacent to the watershed on the east. Public facilities located in the southern portion include Sun Valley Park, Sun Valley Middle School, Roscoe Elementary School, and an LADWP power line easement.

1.4 PROJECT DESCRIPTION

1.4.1 Project Components

The Watershed Management Plan consists of multiple components, each designed to manage stormwater runoff and reduce flooding while also achieving other project objectives listed above. The majority of the components involve construction and operation of stormwater storage and/or infiltration facilities (e.g., sedimentation and infiltration basins, underground storage tanks, and dry wells). The collected stormwater would be treated prior to groundwater recharge or reuse (irrigation or gravel washwater). Where appropriate, stormwater storage facilities would be designed to provide recreational facilities and/or wildlife habitat areas. In addition, catch basins and storm drains are proposed to collect and convey runoff and reduce flows carried on street surfaces.

Table 1-1 provides a summary description of all plan components considered for inclusion in at least one of the final four alternatives. Locations of the project components are shown in **Figure 1-1**.

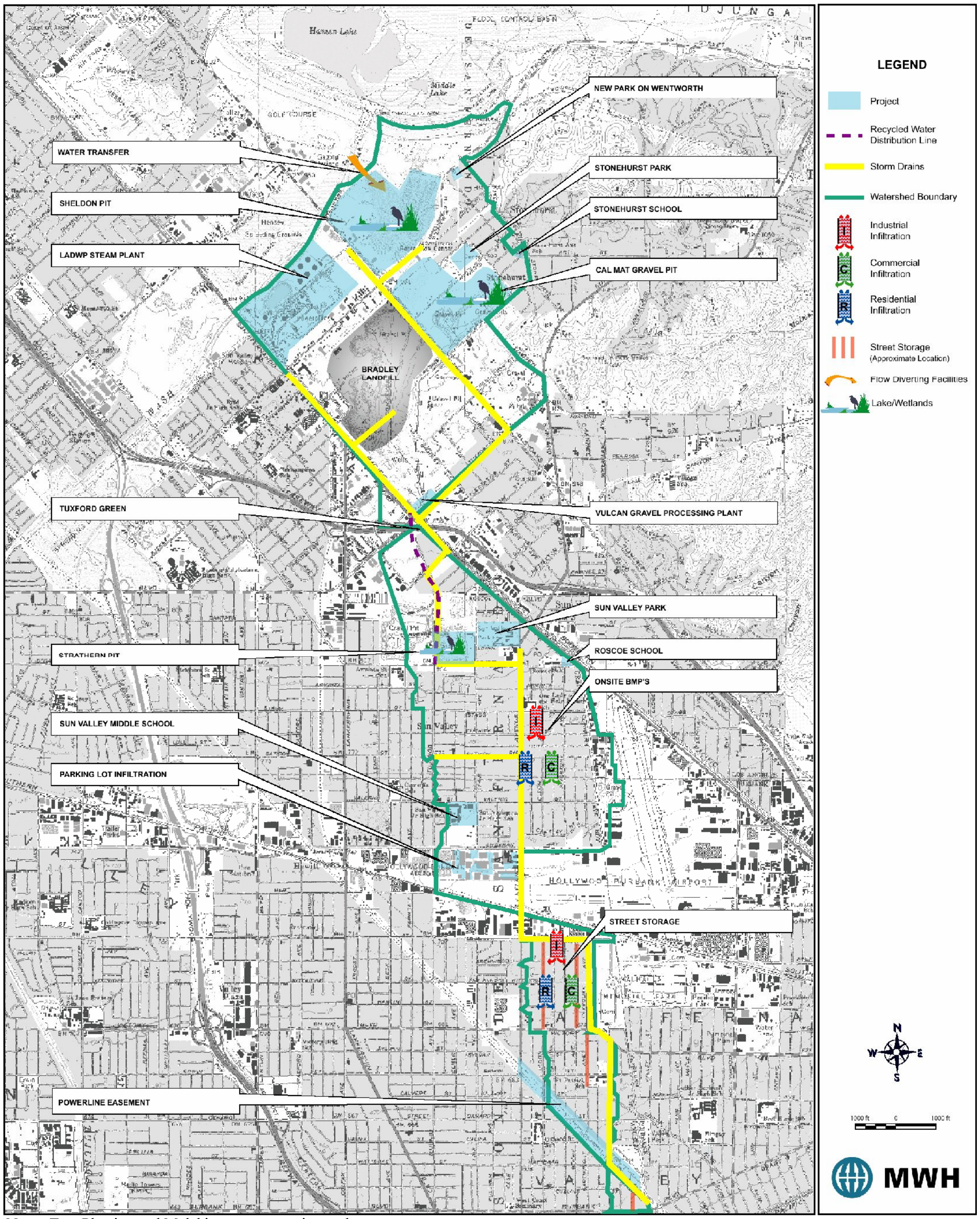
1.4.2 Monitoring Program

The Watershed Management Plan includes a monitoring program to collect data to evaluate the effectiveness of the proposed stormwater management facilities in reducing flooding and protecting/enhancing water quality. Parameters to be monitored include runoff volume, surface water and groundwater quality, and groundwater levels. The monitoring program would provide valuable data that can be used in future applications of similar stormwater management facilities and techniques in other parts of the Los Angeles region.

1.4.3 Four Alternatives of the Watershed Management Plan

By combining different subsets of these plan components, the County has developed four sample alternatives of the Watershed Management Plan. **Table 1-2** shows the plan components included in each alternative. Since the Watershed Management Plan will be implemented over 10 years, a definitive listing of project components to be contained in the final Plan is not possible. This Program EIR considers the environmental impacts of each of the project components individually as well as the impacts of the four sample alternatives. The County intends to adopt all components of the Watershed Management Plan (**Table 1-1**).

Figure 1-1
Project Location



Note: Tree Planting and Mulching component is not shown.

Figure 1-1
Project Location

Table 1-1
Summary Description of Project Components

Project Component	Existing Use of the Site	Brief Description of Proposed Facilities or Programs	Primary Benefits of Project Component						
			Flood Control	Water Conservation	Recreation	Wildlife	Water Quality	Air Quality, Energy Conservation, and Solid Waste Management	Interagency Coordination
Cal Mat Pit	Exhausted Gravel Pit, currently unused	Convert an exhausted gravel pit into stormwater retention basins (Phase 1), operate the basins as an inert landfill for several years (Interim Phase), then ultimately convert the area into a park with a lake with stormwater storage and infiltration capabilities below the lake bottom (Phase 2).	X	X	X	X	X	X	X
New Park on Wentworth	Vacant	Convert existing vacant lot into a neighborhood park with a shallow depressed area for stormwater collection and infiltration.	X	X	X	X	X	X	X
Onsite BMPs	Residences Businesses	A voluntary program in which participating residents or businesses would install stormwater BMP devices (e.g., cisterns, drywells, or infiltration devices) on their properties.	X	X			X		X
Parking Lot on Sherman	Parking lot within a commercial compound	Install underground stormwater infiltration devices below parking areas within a commercial compound.	X	X			X		X
Power Line Easement	LADWP Power Line Easement	Construct sedimentation and infiltration basins in the open areas between existing power line towers to collect and infiltrate stormwater.	X	X	X	X	X	X	X
Roscoe Elementary School.	LAUSD School	Install underground stormwater infiltration devices below the school's playground and other open areas.	X	X			X	X	X

Table 1-1 (Continued)
Summary Description of Project Components

Project Component	Existing Use of the Site	Brief Description of Proposed Facilities or Programs	Primary Benefits of Project Component						
			Flood Control	Water Conservation	Recreation	Wildlife	Water Quality	Air Quality, Energy Conservation, and Solid Waste Management	Interagency Coordination
Sheldon Pit and Tujunga Wash Diversion	Exhausted Gravel Pit, currently used as a source and disposal location for gravel washwater	Convert an exhausted gravel pit into a series of stormwater storage and infiltration basins, including a wetland for stormwater treatment. The facility would be designed to serve as a public park when not in use for stormwater retention. A portion of the Tujunga Wash channel would be modified to transfer some of the flood water from Tujunga Wash into Sheldon Pit for infiltration.	X	X	X	X	X	X	X
Stonehurst Elementary School	LAUSD School	Install underground stormwater infiltration devices below the school's playground and other open areas	X	X			X	X	X
Stonehurst Park	City of Los Angeles Park	Excavate a portion of the park's grass area and create a shallow depression for stormwater collection and infiltration.	X	X			X		X
Storm Drains	Roadways	Install approximately 13 miles of concrete pipes beneath roadways to convey runoff into proposed stormwater retention facilities (all four alternatives) or to existing collector storm drains (Alternatives 2 and 4).	X						X
Strathern Pit	Exhausted Gravel Pit, currently used as an inert landfill	Convert an exhausted gravel pit into a stormwater detention area with terraced side-slopes and wetland areas at the bottom for stormwater treatment. The facility would be designed to serve as a public park when not in use for stormwater retention. The collected stormwater would be either reused for gravel processing (Alternative 3) or transferred to the Tujunga Spreading Grounds for infiltration (Alternatives 1, 2, and 4).	X	X	X	X	X	X	X

Table 1-1 (Continued)
Summary Description of Project Components

Project Component	Existing Use of the Site	Brief Description of Proposed Facilities or Programs	Primary Benefits of Project Component						
			Flood Control	Water Conservation	Recreation	Wildlife	Water Quality	Air Quality, Energy Conservation,, and Solid Waste Management	Interagency Coordination
Street Storage	Roadways	Install underground storage tanks and infiltration galleries beneath roadways to store and infiltrate runoff.	X	X			X		X
Sun Valley Middle School	LAUSD School	Modify the school's sports field and install underground storage tanks and an infiltration system to collect and infiltrate stormwater. Modify the staff parking lot and Quad and install dry wells for stormwater infiltration.	X	X	X	X	X	X	X
Tree Planting and Mulching	Various	A voluntary program in which participating residents or businesses would plant trees on their properties and/or take part in a green waste recycling program.	X	X		X	X	X	X
Tuxford Green	Vacant	Install underground storage tanks for temporary storage of stormwater. The site would be landscaped and designed to provide aesthetic amenities as well as information about the project.	X	X			X	X	X
Valley Steam Plant	LADWP Power Plant	Construct retention basins for stormwater collection and infiltration on a portion of the plant's open areas. Areas around the basins would be landscaped to provide recreation and aesthetic amenities for plant employees. Former oil tanks located onsite would be used for temporary storage of stormwater during very large storms.	X	X	X	X	X	X	X
Vulcan Gravel Processing Plant	Gravel Processing Plant	Construct retention basins for stormwater storage. Install a pump and a pipeline to transfer the collected water to an existing water storage tank for later reuse onsite.	X	X			X		X

Table 1-2
Plan Components in Each Alternative

Plan Components	Alternatives			
	1 Maximize Infiltration	2 Maximize Water Conservation	3 Maximize Reuse	4 Urban Storm Protection
Cal Mat Pit			✓	✓
New Park on Wentworth	✓			
Onsite BMPs (% participation)	40 %	20 %	40 %	20 %
Parking Lot on Sherman Way	✓	✓		✓
Power Line Easement (length)	1.1 miles	0.5 miles	0.9 miles	0.8 miles
Roscoe Elementary School	✓			
Sheldon Pit and Tujunga Wash Transfer		✓		
Stonehurst Elementary School	✓			
Stonehurst Park	✓			
Storm Drains	✓	✓	✓	✓
Strathern Pit	Infiltration*	Infiltration*	Reuse**	Infiltration*
Street Storage (length of streets required)	1.5 miles	0.6 miles	5.1 miles	0.4 miles
Sun Valley Middle School	✓	✓	✓	✓
Sun Valley Park***	✓	✓	✓	✓
Tree Planting and Mulching (% participation)	40 %	20 %	40 %	20 %
Tuxford Green	✓	✓	✓	✓
Valley Steam Plant	✓	✓	✓	✓
Vulcan Gravel Processing Plant	✓	✓	✓	✓

* Infiltration in Tujunga Spreading Grounds
** Reuse of stormwater at Vulcan Gravel Processing Plant
*** Sun Valley Park is a pilot project included as part of the Watershed Management Plan. It is being implemented on an accelerated schedule in order to collect data on the effectiveness of the proposed stormwater management projects. CEQA documentation has been completed for this component of the Plan.

1.5 PROJECT IMPLEMENTATION

Implementation of the overall Watershed Management Plan will be phased over approximately 10 years. Five of the plan components, referred to as Phase 1 Projects, could be implemented in a shorter timeframe (1 to 3 years) in order to accomplish visible results and continue to build community support for the overall Watershed Management Plan. The five components are: Cal Mat Pit, Sun Valley Middle School, Tuxford Green, Valley Steam Plant, and Vulcan Gravel Processing Plant.

1.6 CEQA ALTERNATIVES

In addition to the analysis of the four County-defined alternatives and a theoretical worst-case alternative, environmental effects of additional project alternatives were evaluated (**Table 1-3**).

Table 1-3
Summary of CEQA Alternatives

Alternative	Impact Discussion
No Project – no stormwater management facilities would be constructed, land uses at the project component sites would remain as under existing conditions or potentially convert to residential, industrial, or park facilities.	• Significant construction-related air emissions could be avoided. • Local flooding would continue. • Project benefits would not be realized.
Project 9250 – approximately 10 miles of storm drains would convey drainage from the watershed to the Los Angeles River.	• Project implementation would have significant environmental impacts on construction-related air quality, traffic, and emergency access. • Flooding risk to downstream communities along the Los Angeles River would be increased. • Project benefits would not be realized.
Boulevard Pit – this active gravel pit would be substituted for Sheldon Pit and Tujunga Wash Transfer (Alternative 2).	• Construction-related impacts would be similar to Sheldon Pit. • On-going gravel operations would be interrupted. • Local flood control benefit would be reduced. • Unknown, but potentially significant impacts to biological resources.

Based on a review of the County-defined alternatives and the CEQA alternatives described above, the environmentally superior alternative is identified as Alternative 2 (see Table 1-2). This alternative provides reduced local flooding while including project components with wetlands, parks and groundwater infiltration.

1.7 AREAS OF KNOWN CONTROVERSY

During preparation of the Watershed Management Plan and the Program EIR, identified areas of concern included groundwater quality from stormwater infiltration and unknown cultural and biological resources on sites that could not be accessed for survey (Vulcan Gravel Processing Plant, Cal Mat Pit, Sheldon Pit, and Strathern Pit). With the exception of unavoidable disturbance to sensitive species (unknown, but possible significant impact), mitigation measures have been identified to reduce impacts related to these topics to less than significant levels.

1.8 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Based on the analysis presented in the Program EIR, environmental impacts related to implementation of the Watershed Management Plan components are categorized as:

- Beneficial
- Less than significant

- Less than significant after incorporation of mitigation
- Potentially significant

1.8.1 Beneficial Impacts

As an environmental enhancement project, implementation of the Watershed Management Plan is anticipated to have beneficial impacts with regard to: habitat enhancement, local and downstream flooding reduction, surface water quality improvement, water conservation, and recreational facilities improvements and expansions.

1.8.2 Less than Significant Impacts

Construction and operation of the components of the Plan are anticipated to have a less than significant impact on the environment regarding: dust emissions during construction and air pollutant emissions during operation; biological resources at most component sites; seismic ground shaking, surface rupture, subsidence and expansive soils; use of hazardous materials; dam safety; surface water quality due to modification of Tujunga Wash; groundwater quality from general operation; noise during operation; landfill capacity; and most public utilities and services during operation.

1.8.3 Less than Significant Impacts After Incorporation of Mitigation

With incorporation of mitigation measures, the following impacts were found to be less than significant: disturbance of existing coastal sage scrub at New Park on Wentworth; historical resources at Sheldon Pit and Cal Mat Pit; archaeological resources potentially present at Cal Mat Pit, Roscoe School, Sheldon Pit, Stonehurst Park, and Valley Steam Plant; slope instability at Cal Mat Pit, Sheldon Pit, and Strathern Pit; liquefaction at Sheldon Pit, Cal Mat Pit, and the Power Line Easement; soil erosion; soil contamination (including related water quality impacts); public health related to mosquito habitat; surface water quality related to soil erosion; use of Tujunga Spreading Grounds; construction noise; police and fire protection during construction; school access during construction; transportation; utilities disturbance from construction of storm drains and street storage components; and operational impacts on power line towers.

1.8.4 Potentially Significant Impacts

Nitrogen oxide (NOx) emissions during construction at Cal Mat pit, Parking Lot on Sherman, Power Line Easement, Sheldon Pit, Stormdrains, Strathern Pit, Street Storage, and Vulcan Gravel Processing Plant are predicted to exceed thresholds of significance (for temporary construction emissions) even after incorporation of feasible mitigation measures. Mitigation has been identified to reduce NOx emissions to the extent feasible. Air pollutant emissions during operation will be less than significant.

Additional analyses will be conducted to address biological resources at Cal Mat Pit, Sheldon Pit, Strathern Pit, Vulcan Gravel Processing Plant, and New Park on Wentworth. If threatened or endangered plant or animal species are present on these sites, disturbance to these species from project construction could be deemed significant even if authorized by the relevant wildlife agencies. Significant unavoidable impacts to biological resources are therefore possible, but not expected, and will be fully evaluated in subsequent analyses. If sensitive resources are found, project re-design to avoid and protect the sensitive species will be the first consideration. However, depending on the location of sensitive resources at the sites, if any, project redesign that avoids the biological resources while still meeting the flood control objective of the project component may be infeasible.

Sección 1
Resumen Ejecutivo

Este Reporte final de Impacto Ambiental (EIR – siglas en Ingles) presenta los resultados de un análisis de los efectos ambientales con respecto al Plan de Administración de la Cuenca Hidrológica de Sun Valley propuesto por el Departamento de Obras Publicas del Condado de Los Ángeles (LACDPW) como Agencia Líder según CEQA. Los comentarios recibidos de la agencia asi como del publico con las respectivas respuestas se encuentran en el **Apendice H**. El Plan de Administración de la Cuenca Hidrológica es un programa multiuso de control fluvial para resolver el problema local de inundación en la Cuenca Hidrológica de Sun Valley mientras se incrementa la conservación de agua, las oportunidades recreativas, el hábitat de la fauna, y la reducción de contaminación fluvial. Implementación del Plan de Administración de la Cuenca Hidrológica incluirá la construcción de varias instalaciones fluviales dentro de dicha cuenca hidrológica, chicas y grandes, incluyendo aquellas para: retención y/o infiltración, transporte, y distribución para el reciclaje.

1.1 ANTECEDENTES

Las 4.4 millas cuadradas que componen la Cuenca Hidrológica de Sun Valley no tiene ningún sistema de drenaje subterráneo, y se encuentra con la necesidad de resolver frecuentes inundaciones. Al final de la década de 1980, se propuso construir drenajes de aguas fluviales, pero no se implementaron a falta de fondos y falta de apoyo de la comunidad. LACDPW empezó a colaborar con el Grupo de la Cuenca Hidrológica de Sun Valley para desarrollar un Plan Multiuso de Administración de la Cuenca. Formado en 1998, este Grupo consiste de residentes de Sun Valley, agencias locales y del estado, y negocios locales y grupos ambientales. El lema del Grupo es:

> *"…resolver los problemas de inundación local y al mismo tiempo retener toda la agua fluvial en la cuenca hidrológica, incrementando la conservación de agua, oportunidades recreativas, y el hábitat de la fauna, y reducir la contaminación de aguas fluviales."*

1.2 OBJETIVOS DEL PROYECTO

Los siguientes objetivos en el Plan de Administración de la Cuenca Hidrológica de Sun Valley han sido desarrollados por el Condado basados en el lema del Grupo. El objetivo primario es de reducir inundaciones locales en el área del proyecto. Los objetivos secundarios son: aumentar la conservación del agua, aumentar oportunidades recreativas, aumentar el hábitat de la fauna, mejorar la calidad del agua, proveer mas beneficios ambientales (por ejemplo, conservación de energía, mejora de la calidad del aire y el manejo de desechos sólidos), e incrementar la participación de agencias múltiples.

1.3 LOCACION DEL PROYECTO Y ESCENARIO AMBIENTAL

El Plan de Administración de la Cuenca Hidrológica comprende de elementos múltiples localizadas en toda la Cuenca Hidrológica de Sun Valley. El área de estudio se encuentra aproximadamente a 14 millas al noroeste del centro de Los Ángeles, y esta cerca de la intersección del Interestatal 5 y la carretera estatal 170 (**Figura 1-1**) La Cuenca Hidrológica comprende de 4.4 millas cuadradas e incluye las comunidades de Sun Valley y el Norte de Hollywood, parte de la Ciudad de Los Ángeles.

Localizada en el nordeste del Valle de San Fernando, la cuenca hidrológica es delimitada en el norte por las Montañas de Santa Mónica, al oeste por la Montañas Verdugo, al poniente por las colinas Simi y al sur por las Montañas de Santa Mónica. El Valle de San Fernando es una depresión plana, ancha, llena de aluvión con dirección oeste a este. La área del proyecto se encuentra en el deposito de aluvión Tujunga, el cual comienza en la esquina noreste del Valle de San Fernando donde se originan los drenajes Little y Big Tugunga desde las Montañas de Santa Monica (cerca de la Presa Hansen). Esta cuenca hidrológica no contiene características de rios y lagos. El agua fluvial desemboca en el Rió de Los Ángeles y eventualmente termina en el Océano Pacifico. La cuenca hidrológica yace sobre la parte poniente de la Cuenca de Aguas Subterráneas de San Fernando, el cual es un acuífero sin limites compuesto de depósitos aluviales.

El área del proyecto es altamente urbanizada e incluye terreno industrial, comercial y residencial pero sostiene unos pocos vestigios de flora indígena o hábitat de fauna. El terreno en el lado norte y nordeste de la cuenca hidrológica se usa principalmente como espacio libre y residencial de densidad baja, incluyendo la Campo de Golf Presa Hansen, el Parque Stonehurst, la Escuela Primaria Stonehurst, y el área residencial que rodea la cuenca hidrológica. El área restante en la cuenca hidrológica norteña (al norte de la intersección de las calles Tuxford Street y San Fernando Road) es incrustada con usos industriales. Estos usos industriales incluyen excavaciones de grava ahora usadas como basurero de escombros de construcción inertes (Cal Mat Pit) o desechos de grava (Sheldon Pit), un basurero municipal (Bradley Landfill), una instalación generadora de electricidad (Departamento de Agua Y Energia de la Ciudad de Los Angeles – LADWP, Valley Steam Plant), Planta Vulcan Procesadora de Grava, y varias desmanteladoras de automóviles. Los campos de irrigación de agua Hansen se encuentran fuera del la cuenca hidrológica e inmediatamente noroeste de la Valley Steam Plant.

La parte sureña de la cuenca hidrológica, localizada al sur de la intersección Tuxford-San Fernando, consiste de uso residencial de baja a mediana densidad. Hay algunos usos industriales, incluyendo un basurero inerte (Strathern Pit), los cuales se encuentran al norte de Strathern Street tanto como el aeropuerto Burbank-Glendale-Pasadena, el cual esta adyacente a la cuenca hidrológica hacia el oriente. Instalaciones publicas localizadas en la parte sur incluyen el parque Sun Valley, la escuela secundaria Sun Valley, la escuela Primaria Roscoe, y un terreno dedicado a líneas de electricidad del LADWP.

1.4 DESCRIPCION DEL PROYECTO

1.4.1 Elementos del Proyecto

El Plan de Administración de la Cuenca Hidrológica consiste de elementos múltiples, cada uno creado para dirigir las aguas fluviales y reducir inundaciones y al mismo tiempo completar otros objetivos mencionados anteriormente. La mayoría de los elementos consiste de la construcción y operación de instalaciones para contener y/o para infiltrar aguas fluviales (por ejemplo, cuencas de sedimentación e infiltración, tanques subterráneos, y la perforación de pozos). El agua fluvial seria depurada antes de recargar las aguas subterráneas o reciclaje (irrigación o agua para lavar grava). Cuando sea apropiado, las instalaciones de almacenaje de agua fluvial serian construidas para proveer instalaciones recreativas y/o áreas como hábitat de fauna. Además, se han propuesto sistemas de drenaje para colectar aguas fluviales y reducir el flujo en las calles.

Tabla 1-1 contiene un resumen de todos los elementos tomados en cuenta para su inclusión en al menos una de las cuatro alternativas. Los elementos del proyecto se pueden ver en la **Figura 1-1**.

1.4.2 Programa de Verificación

El Plan de Administración de la Cuenca Hidrológica incluye un plan de verificación para recoger información y así analizar la efectividad del manejo de las instalaciones de instalaciones fluviales y medir la reducción de inundaciones y proteger /mejorar la calidad del agua. Las cantidades a verificar consisten de volumen de lluvia, calidad de agua subterránea como de superficie, y los niveles del agua subterránea. El programa de verificación nos dará información valiosa la cual se podrá usar en situaciones de manejo de aguas fluviales similares en el futuro y métodos en otras partes de la región de Los Ángeles.

1.4.3 Cuatro Opciones del Plan de Administración de la Cuenca Hidrológica

Al combinar diferentes subelementos dentro de este plan, el Condado ha desarrollado cuatro alternativas del Plan de Dirección de la Cuenca Hidrológica. **Tabla 1-2** demuestra los elementos están incluidos in cada alternativa. Puesto que el Plan de Administración de la Cuenca Hidrológica será aplicada a lo largo de 10 años, no es posible enumerar los elementos definitivos del proyecto a ser abarcados en el Plan final. Este documento ambiental EIR toma a cuenta cada uno de los impactos de los elementos del proyecto individualmente tanto como las cuatro opciones señaladas como ejemplo. El Condado tiene la intención de adoptar todos los elementos del Plan de Administración de la Cuenca Hidrológica (**Tabla 1-1**).

Figura 1-1
Lugar del Proyecto

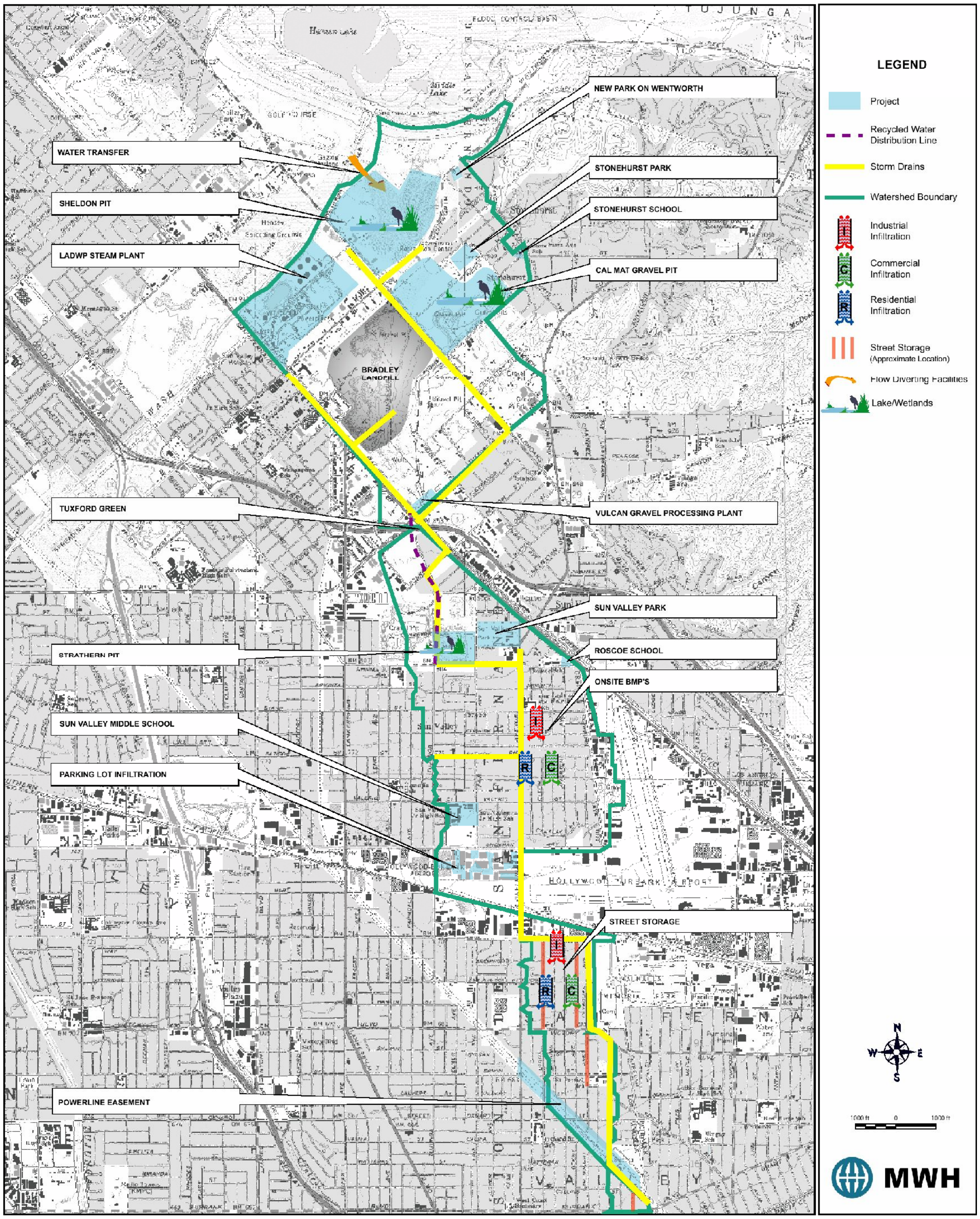


Figura 1-1
Lugar del Proyecto

Tabla 1-1
Resumen de los Elementos del Proyecto

Elemento	Uso existente del lugar	Descripción Breve de las Instalaciones o Programas Propuestas	Beneficio Principal del Elemento del Proyecto						
			Control de Aguas Fluviales	Preservación de Agua	Recreación	Fauna	Calidad del Agua	Calidad del Aire, Conservación de Energía, Manejo de Basura Sólida	Coordinación Entre Agencias
Cal Mat Pit	Mina de Grava Agotada, sin usar	Convertir la mina de grava agotada a una depresión para almacenar agua fluvial (Etapa 1), usar las depresiones como basureros inertes por muchos años (Etapa Interina), y finalmente convertir el área en un parque con un lago con almacenamiento fluvial y capacidad de infiltración por debajo del lago (Etapa 2).	X	X	X	X	X	X	X
Nuevo Parque en Wentworth	Vacante	Transformar el terreno baldío a un parque pequeño con una área de depresión baja para almacenar aguas fluviales y para infiltración.	X	X	X	X	X	X	X
BMPs (Practicas de Mejor Manejo) locales	Residencias, Negocios	Un programa voluntario en el cual residentes participantes o negocios instalarían sistemas para mejorar el manejo de las aguas fluviales (BMPs) – por ejemplo: aljibes o cisternas, pozos, o métodos de infiltración, en sus propiedades	X	X			X		X
Estacionamiento en Sherman	Estacionamiento dentro de un complejo comercial	Construir sistemas de infiltración de agua fluvial subterráneos por debajo del estacionamiento de complejos comerciales.	X	X			X		X
Terreno dedicado a Alambrado de Electricidad	Propiedad de LADWP	Construir depresiones de infiltración y sedimentación en áreas abiertas entre las torres de electricidad para almacenar e infiltrar aguas fluviales.	X	X	X	X	X	X	X
Escuela Primaria Roscoe.	Escuela de LAUSD	Construir sistemas de infiltración de aguas fluviales debajo de la área de recreo y otras áreas abiertas en la escuela.	X	X			X	X	X

Tabla 1-1 (Continuación)
Resumen de los Elementos del Proyecto

Elemento	Uso existente del lugar	Descripción Breve de las Instalaciones o Programas Propuestas	Beneficio Principal del Elemento del Proyecto						
			Control de Aguas Fluviales	Preservación de Agua	Recreación	Fauna	Calidad del Agua	Calidad del Aire, Conservación de Energía, Manejo de Basura Sólida	Coordinación Entre Agencias
Mina Sheldon Desviacion Tujunga Wash	Mina Agotada de Grava, con uso para deshacerse del agua usada para lavar grava	Transformar una mina de grava agotada a un sistema de almacenamiento e infiltración de aguas fluviales, incluyendo un terreno para mejorar el agua fluvial. La instalación seria diseñada para poder ser usada como parque cuando no se use como retención de aguas fluviales. Una parte del canal Tujunga Wash seria transformado para desviar cierta cantidad de aguas fluviales del Tujunga Wash hacia la mina Sheldon para infiltración.	X	X	X	X	X	X	X
Escuela Primaria Stonehurst	LAUSD	Construir sistemas de drenaje subterráneos debajo de la área de recreo y otras áreas abiertas de la escuela.	X	X			X	X	X
Parque Stonehurst	Parque Ciudad de L. A.	Escarbar una parte del parque y crear una depresión baja para el almacenamiento e infiltración de aguas fluviales.	X	X			X		X
Sistemas de Drenaje	Carreteras	Construir cerca de 13 millas de tubos de concreto debajo de las carreteras para contener la lluvia y transportarla a instalaciones de almacenamiento (las cuatro opciones) o a sistemas de drenaje (Opción 2 y 4)	X						X
Mina Strathern	Mina Agotada de Grava, con uso de basurero inerte	Transformar una mina agotada de grava a un sistema de almacenamiento de aguas fluviales con pendientes y terrazas y áreas húmedas en la base para mejorar las aguas fluviales. La instalación seria diseñada como parque publico cuando no se use como almacenamiento de aguas fluviales. El agua fluvial almacenada seria usada para lavar grava (Opción 3) o transportada a los Campos de Infiltración Tujunga (Opciones 1, 2 y 4)	X	X	X	X	X	X	X

Tabla 1-1 (Continuación)
Resumen de los Elementos del Proyecto

Elemento	Uso existente del lugar	Descripción Breve de las Instalaciones o Programas Propuestas	Beneficio Principal del Elemento del Proyecto						
			Control de Aguas Fluviales	Preservación de Agua	Recreación	Fauna	Calidad del Agua	Calidad del Aire, Conservación de Energía, Manejo de Basura Sólida	Coordinación Entre Agencias
Almacenamiento en las calles	Carreteras	Install underground storage tanks and infiltration galleries beneath roadways to store and infiltrate runoff.	X	X			X		X
Escuela Secundaria Sun Valley	Escuela LAUSD	Transformar el campo de deportes de la escuela e construir tanques de almacenamiento subterráneos y un sistema de infiltración para contener e infiltrar aguas fluviales. Transformar el estacionamiento y el área abierta (Quad) y construir pozos para la infiltración de aguas fluviales.	X	X	X	X	X	X	X
Plantar Arboles y reciclaje de desechos verdes (pasto, hojas)	Varias	Este es un programa voluntario en el cual los residentes y negocios participantes plantarían árboles y participarían en un programa de reciclaje de desechos verdes.	X	X		X	X	X	X
Tuxford Green	Vacante	Construir tanques de almacenamiento subterráneos para almacenar aguas fluviales provisionalmente. El lugar seria decorado con plantas y flores para proveer amenidades tanto como información acerca del proyecto.	X	X			X	X	X
Planta de Energia a Vapor Valley	LADWP Planta de Energía	Construir cuencas para el almacenamiento de aguas fluviales en una parte de las áreas abiertas de la planta. Las áreas alrededor de las cuencas serian decoradas con flores y diseñadas para proveer amenidades estéticas para los empleados de la planta. Tanques de petróleo en la planta serian utilizados como almacenamiento provisional de aguas fluviales durante lluvias fuertes.	X	X	X	X	X	X	X
Planta Procesadora de Grava Vulcan	Planta Procesadora de Grava	Construir cuencas para el almacenamiento de aguas fluviales. Construir una bomba hidráulica y un sistema de drenaje para transportarla a un tanque de almacenamiento.	X	X			X		X

Tabla 1-2
Elementos del Proyecto en Cada Opción

Elementos del Proyecto	Alternativas			
	1 Infiltración Máxima	2 Conservación de Agua Máxima	3 Reciclaje Máximo	4 Protección contra Inundaciones Urbanas
Mina Cal Mat			✓	✓
Parque Nuevo en Wentworth	✓			
BMPs (% participación) – Mejor Manejo de Administración del Agua	40 %	20 %	40 %	20 %
Estacionamiento en Sherman Way	✓	✓		✓
Terreno de Cables Eléctricos (Medida)	1.1 millas	0.5 millas	0.9 millas	0.8 millas
Escuela Primaria Roscoe	✓			
Mina Sheldon y Zona de Cambio Tujunga Wash		✓		
Escuela Primaria Stonehurst	✓			
Parque Stonehurst	✓			
Sistemas de Drenaje de Aguas Fluviales	✓	✓	✓	✓
Mina Strathern	Infiltration*	Infiltración*	Reciclaje**	Infiltración*
Almacenamiento de Calles (medida de calles requerida)	1.5 millas	0.6 millas	5.1 millas	0.4 millas
Escuela Secundaria Sun Valley	✓	✓	✓	✓
Parque Sun Valley***	✓	✓	✓	✓
Plantación de Árboles y Reciclaje de Desechos Verdes (% participación)	40 %	20 %	40 %	20 %
Tuxford Green	✓	✓	✓	✓
Planta de Energía a Vapor Valley	✓	✓	✓	✓
Planta Procesadora de Grava Vulcan	✓	✓	✓	✓

* Infiltración en Campos de Infiltración Tujunga
** Reciclaje de aguas fluviales en la Planta Procesadora de Grava Vulcan
*** El Parque Sun Valley proyecto modelo incluido como parte del Plan de Administración de la Cuenca Hidrológica. Se esta poniendo en practica con una agenda acelerada para recoger información con respecto a la efectividad de los proyectos de manejo de aguas fluviales. La documentación requerida por CEQA se ha cumplido para este elemento del Plan..

1.5 PONER EN PRACTICA EL PROYECTO

El Plan de Administración de la Cuenca Hidrológica se pondrá en practica en partes en cerca de 10 anyos. Cinco de los elementos del plan, conocido como Proyectos de la Fase 1, se puede tomar a cabo en menos tiempo (1 a 3 anyos) para así realizar resultados tangibles y continuar a conseguir apoyo de la comunidad para el Plan completo. Los cinco elementos son: Mina Cal Mat, Escuela Secundaria Sun Valley, Tuxford Green, Planta de Energía a Vapor Valley, y la Planta Procesadora de Grava Vulcan.

1.6 OPCIONES CEQA

Además de el análisis de las cuatro opciones definidas por el Condado , en teoría y en el peor de los casos, efectos ambientales de otras opciones fueron examinadas (**Tabla 1-3**).

Tabla 1-3
Resumen de Opciones CEQA

Opción	Impactos
Hacer Nada – no se construirían instalaciones de manejo de aguas fluviales, los terrenos en los lugares de los elementos del proyecto quedarían igual como en el presente o hay la posibilidad de convertirlos a instalaciones industriales, residencias o parques.	• Se podrían evitar emisiones significas durante la construcción. • Seguirían las inundaciones. • Los beneficios del proyecto no se materializarían.
Proyecto 9250 – aproximadamente 10 millas de drenajes de aguas fluviales serian transportadas a la cuenca hidrológica del Rió de Los Ángeles.	• La construcción del proyecto tendría impactos ambientales significativos con respecto a la calidad del aire, trafico y acceso de emergencia. • El riesgo de inundación aumentaría abajo del Rió de Los Ángeles. • Los beneficios del proyecto no se materializarían.
Mina Boulevard – esta mina activa seria reemplazada por la mina Sheldon y el área de traslado del Aluvión Tujunga (Opción 2).	• La construcción tendría impactos similares a los de la mina Sheldon. • El funcionamiento de la mina seria interrumpida. • Los beneficios locales de control de aguas fluviales seria disminuido. • Desconocido, pero impacta potencialmente a los recursos biológicos.

Basado en el repaso de las opciones definidas por el Condado y las Opciones CEQA descritas arriba, la mejor opción ambiental se a identificado como la Opción numero 2 (vea Tabla 1-2). Esta opción provee la disminución de inundaciones locales y al mismo tiempo incluye elementos como ríos y lagos, parques e infiltración de aguas subterráneas.

1.7 AREAS CONTROVERSIALES

Se identificaron áreas de interés durante la preparación del Plan de Administración de la Cuenca Hidrológica y el documento de Impacto Ambiental (EIR), incluyendo la calidad del agua subterránea a causa de la infiltración de aguas fluviales y de recursos culturales y biológicos desconocidos en lugares que no se pudo entrar para encuestar (Planta Procesadora de Grava Vulcan, Mina Cal Mat, Mina Sheldon, y la Mina Strathern). Con la excepción de interrupciones inevitables a especies delicadas (desconocido, pero hay posibilidad de impacto significativo), medidas de reparo se han señalado para disminuir los impactos relacionados a estos tópicos a niveles menos que significante.

1.8 RESUMEN DE LAS MEDIDAS PARA REPARAR LOS IMPACTOS

Apoyado con el análisis planteado en el documento ambiental EIR, los impactos ambientales relacionados con la aplicación de los elementos del Programa de Administración de la Cuenca Hidrológica son clasificados así:

- Benéfico
- Menos que significativo
- Menos que significativo después de la aplicación de reparos
- Latentemente significativo

1.8.1 Impactos Benéficos

Puesto que este proyecto mejora el medio ambiente, se anticipa que la aplicación del Plan de Administración de la Cuenca Hidrológica traerá impactos benéficos relacionados a: mejoras a los hábitat, disminución de inundaciones, mejoras a la calidad de lagos y ríos, preservación de agua, mas expansiones y mejoras a instalaciones recreativas.

1.8.2 Impactos menos que significativos

Se anticipa que los impactos ambientales que la construcción y el funcionamiento de los elementos del Plan sean menos que significativos con relación a: polvo generado y emisiones contaminantes durante el funcionamiento; recursos biológicos en la mayoría de los lugares; temblores sísmicos, ruptura de la superficie, hundimiento y suelos expansivos; utilización de materiales tóxicos; seguridad de presas; calidad de aguas en el Aluvión Tujunga dadas a transformaciones de esta; calidad del agua subterránea durante funcionamiento general; ruido durante el funcionamiento, capacidad de basureros; y la mayoría de servicios públicos durante el funcionamiento.

1.8.3 Impactos menos que significativos

Se espera que al poner en practica las medidas de reparo, los impactos siguientes serán menos que significativos: alteración de matorrales de salvia en el Nuevo Parque de Wentworth; recursos históricos en las minas Sheldon y Cal Mat recursos arqueológicos posiblemente presentes en la Mina Cal Mat, Escuela Roscoe, Mina Sheldon, Parque Stonehurst, y la Planta a Vapor Valley; inestabilidad de laderas en las Minas Cal Mat, Sheldon y Strathern; licuefacción en las Minas Sheldon, Cal Mat, y el terreno dedicado a Alambrado de Electricidad; desgaste de suelos; contaminación de suelos (incluyendo impactos relacionados a la calidad del agua); salud publica con relación a moradas de mosquitos; calidad de ríos y lagos a causa de desgaste de suelos; utilización de los Campos de Irrigación Tujunga; ruido durante la construcción; servicios de policía y bomberos durante la construcción; entrada a escuelas durante la construcción; medios de transporte; alteración a servicios públicos a causa de la construcción de drenajes de agua fluvial y elementos para almacenaje; e impactos de funcionamiento de torres eléctricas.

1.8.4 Posibles Impactos Significativos

Las emisiones oxido de nitrógeno (NOx) durante la construcción (en el Mina Cal Mat, estacionamiento Sherman, terreno dedicado al Alambrado eléctrico, Mina Sheldon, Sistemas de Drenaje de Aguas Fluviales, Mina Strathern, almacenamientos de las calles, y Planta Vulcan Procesadora de Grava) se puede considerar significativos (para emisiones de construcción temporaria) aun después de la aplicación de reparos viables. Se han señalado reparos en casos viables para disminuir las emisiones NOx. Las emisiones del aire contaminado durante la operación serán menos significantes.

Análisis suplementarios se llevaran a cabo para indicar los recursos biológicos en la Mina Cal Mat, Mina Sheldon, Mina Strathern, Plant procesador Grava Vulcan, el Nuevo Parque Wentworth. Si hubiese riesgo o peligro de plantas o especies, a causa de la construcción del proyecto esto seria muy significante, aunque fuese autorizado por las agencias relacionadas con la fauna. Los impactos significativos inevitables a los recursos biológicos son posibles, pero no previstos, y serán evaluados a través de análisis subsecuentes. En el caso que se encontrasen recursos sensibles, como primera consideración, se volvería a diseñar el proyecto para evitar y proteger las especies sensibles. Sin embargo, dependiendo de la localidad de los lugares de recursos sensibles, en el casos que hubiese alguno, el rediseño del proyecto que evita los recursos biológicos mientras tratando de alcanzar el objetivo de control del fluido del componente del proyecto, puede ser no factible.

Section 1A
Summary of Impacts, Mitigation Measures and Future Analyses

As summarized below in **Table 1A-1**, the majority of impacts on the environment related to implementation of the Watershed Management Plan are beneficial or less than significant. For most topics, mitigation measures have been identified to reduce impacts to below a level of significance or to further reduce less than significant effects. For two topics, nitrogen oxide emissions during construction (at some component sites) and biological resources (at some component sites), impacts may still be significant even after incorporation of feasible mitigation measures. Air quality mitigation measures have been identified to reduce emissions to the extent feasible. For biological resources, the impact assessment is speculative since not all sites could be surveyed for sensitive resources. Future analyses will be conducted prior to project component construction and where warranted, mitigation measures will be implemented to reduce impacts on biological resources to the extent feasible If sensitive resources are found, project re-design to avoid and protect the sensitive species will be the first consideration. However, depending on the location of sensitive resources at the sites, if any, project redesign that avoids the biological resources while still meeting the flood control objective of the project component may be infeasible. Future analyses identified for the project are summarized in **Table 1A-2**.

Table 1A-1
Summary of Project Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
Air Quality			
• PM10 emissions during construction (earth moving activities)	LS	**(Construction Phase)** The following measures will be implemented during construction of all project components to reduce fugitive dust emissions: **A-1** Clean dirt from construction vehicle tires and undercarriages when leaving the construction site and before entering local roadways. **A-2** During earth-moving activities, water the construction area as necessary, but at least twice per day. **A-3** Water temporary open storage piles once per hour or install temporary covers. **A-4** Water unpaved roadways three times per day or apply non-toxic soil stabilizers. **A-5** Limit construction vehicle speed on the project site to 15 miles per hour (mph) or less. **A-6** Cover dirt in trucks during on-road hauling. **A-7** Cease earth-moving activities on days when wind gusts exceed 25 mph or apply water to soil not more than 15 minutes prior to moving such soil. **A-8** Sweep streets near the construction area at the end of the day if visible soil material is present. **A-9** For applicable construction areas, establish a vegetative groundcover as soon as feasible after active operations have ceased. Groundcover will be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting. **(Construction Phase)** Based on the site acreage and amount of earthwork involved, the following project components may require implementation of the following mitigation measure per SCAQMD Rule 403: Sheldon Pit, Cal Mat Pit, and Strathern Pit.	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1A-1 (Continued)
Summary of Project Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
(Continued from previous page)		**A-10** Per SCAQMD Rule 403(f), large construction operations (greater than 100 acres of disturbed area or daily earth-moving or throughput volume of 10,000 cubic yards three times during the most recent 365-day period) will either 1) implement fugitive dust suppression measures as specified in Tables 1 and 2 of Rule 403, or 2) prepare a fugitive dust emissions control plan and obtain approval from SCAQMD.	
• Construction NOx emissions for Cal Mat Pit, Parking Lot on Sherman, Power Line Easement, Sheldon Pit, Storm Drains, Strathern Pit, Street Storage, and Vulcan Gravel Processing Plant	PS	**(Construction Phase)** The following measures will be implemented to reduce tailpipe emissions from construction equipment and vehicles, including NO_X: **A-11** Prohibit all vehicles from idling in excess of 10 minutes, both on and off-site. **A-12** Maintain construction equipment in proper tune. **A-13** Encourage contractors to establish trip reduction plans. The goal of these plans will be to achieve a 1.5 average vehicle ridership (AVR) for construction employees. In order to further reduce tailpipe emissions from construction equipment, implementation of the following measure will be considered at the time of construction of individual project components: **A-14** Select construction equipment with low pollutant emissions and high energy efficiency. Factors to consider include model year and alternative fuels (e.g., compressed natural gas, biodiesel, emulsified diesel, methanol, propane, and butane).	PS
• Operational impacts on air quality	LS	None	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1A-1 (Continued)
Summary of Project Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
Biological Resources			
• Construction impacts on limited biological resources available at the following project component sites: Parking Lot on Sherman, Power Line Easement, Roscoe Elementary School, Stonehurst Elementary School, Stonehurst Park, Storm Drains, Sun Valley Middle School, Street Storage, Tree Planting and Mulching, Tuxford Green, and Valley Steam Plant. • Construction impacts on wildlife movement at all project component sites	LS	None	LS
• Beneficial impacts at project component sites with creation and/or enhancement of habitat	B	None	B
• Construction impacts on the existing coastal sage scrub vegetation at New Park on Wentworth	PS	**(Design Phase) B-1** The existing coastal sage scrub vegetation at New Park on Wentworth will be incorporated into the park design, or the proposed facilities will be sited to avoid or minimize disturbance and loss of the vegetation during construction. However, if avoidance is not feasible, the following will be implemented: (a) If the existing coastal sage scrub vegetation will be unavoidably impacted by project construction, the vegetation and associated topsoil will be removed, salvaged or mulched, and stockpiled separately. Following the completion of project construction, the stockpiled topsoil will be replaced and stockpiled vegetation will be replanted (or replaced if mulched) on the site of origin or on another adjacent location as appropriate, under the direction of a qualified biologist. Retention and reapplication of stockpiled topsoil and vegetation will be supplemented with onsite restoration and/or rehabilitation of the same vegetation type at a ratio of 1:1, at minimum, as appropriate and biologically feasible; or	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1A-1 (Continued)
Summary of Project Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
(Continued from previous page)		(b) If post-construction restoration and/or rehabilitation locations cannot be identified on-site, then appropriate and biologically feasible locations identified within other component sites shall be expanded to accommodate additional restoration to meet the 1:1 ratio, at minimum; or (c) If appropriate and biologically feasible restoration and/or rehabilitation for the impacted coastal sage scrub cannot cumulatively be identified within the project component sites, and conditions on the site(s) are appropriate and biologically feasible for a different high-value vegetation type on the site, restoration and/or rehabilitation of this vegetation type may be substituted at a ratio of 1:1, at minimum.	
• Construction impacts on sensitive habitat types whose presence is not known but could not be excluded from Cal Mat Pit, Sheldon Pit, Strathern Pit, and Vulcan Gravel Processing Plant	PS	**(Design Phase) B-2** Prior to construction of Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit, the sites will be surveyed in accordance with agency protocols at the appropriate time of the year for the presence or absence of high-value native vegetation and habitats, including special status vegetation and wetland or riparian vegetation. If high value vegetation/habitat types are identified, the proposed facilities will be designed and/or sited to avoid or minimize disturbance and loss of the vegetation and habitats during construction. However, depending on the location of sensitive resources at the sites, if any, project redesign that avoids the biological resources while still meeting the flood control objective of the project component may be infeasible. For example, the large size of the stormwater retention/infiltration basins proposed for the gravel pit sites might preclude complete avoidance of sensitive biological resources. Therefore, if avoidance is not feasible, the following will be implemented: (a) If a high value vegetation type will be unavoidably impacted by project construction, the vegetation and associated topsoil will be removed, salvaged or mulched, and stockpiled separately. Following the completion of project construction, the stockpiled topsoil will be replaced and stockpiled vegetation will be replanted (or replaced if mulched) on the site of origin or on another adjacent location as appropriate, under the direction of a qualified biologist. Retention and reapplication of stockpiled topsoil and vegetation will be supplemented with onsite restoration and/or rehabilitation of the same vegetation type at a ratio of 1:1, at minimum, as appropriate and biologically feasible; or	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1A-1 (Continued)
Summary of Project Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
(Continued from previous page)		(b) If post-construction restoration and/or rehabilitation locations cannot be identified on-site, then appropriate and biologically feasible locations identified within other component sites shall be expanded to accommodate additional restoration to meet the 1:1 ratio, at minimum; or (c) If appropriate and biologically feasible restoration and/or rehabilitation for the impacted high value vegetation type cannot cumulatively be identified within the project component sites, and conditions on the site(s) are appropriate and biologically feasible for a different high-value vegetation type on the site, restoration and/or rehabilitation of this vegetation type may be substituted at a ratio of 1:1, at minimum. (d) Each acre of created wetlands that requires maintenance (e.g., sediment removal), and will be used to mitigate impacts to existing wetlands in (a) through (c) above, will be used for mitigation at a ratio of 2:1. (e) The post-construction native vegetation restoration will be conducted under the direction of a qualified biologist. Where possible, restoration and/or rehabilitation will be consistent with, or a supplement to, any approved Reclamation Plan approved for any of these component sites. (f) If wetland or riparian vegetation within the waters of the United States will be unavoidably impacted by project construction, USACE will be consulted regarding permits required under Clean Water Act Section 404. All necessary federal and state approvals (including coordination with CDFG and additional CEQA review) will be obtained prior to the implementation of construction activities.	

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1A-1 (Continued)
Summary of Project Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Construction impacts on special status species whose presence is not known but could not be excluded from New Park on Wentworth	PS	**(Design Phase) B-3** A qualified biologist will conduct focused surveys at New Park on Wentworth for the following special status plant and wildlife species at the appropriate time of the year in accordance with appropriate survey protocols : • Plants. southern tarplant, San Fernando Valley spineflower, slender-horned spineflower, Nevin's barberry, Plummer's mariposa lily, mesa horkelia, and Davidson's bush mallow • Wildlife. silvery legless lizard, orange-throated whiptail, San Diego horned lizard, coastal California gnatcatcher, and San Diego black-tailed jackrabbit If any special status species are identified, the proposed facilities will be designed and/or sited to avoid or minimize disturbance and loss of the species during construction. However, depending on the location of sensitive resources at the sites, if any, project redesign that avoids the biological resources while still meeting the flood control objective of the project component may be infeasible. Therefore, if avoidance is not feasible, restoration and/or rehabilitation as described in Mitigation Measure B-1 will be implemented. Additionally, if impacts on a federal or state-listed threatened or endangered species cannot be avoided, USFWS and/or CDFG will be consulted regarding permits required under FESA and/or CESA. All necessary federal and state approvals will be obtained prior to the implementation of construction activities that would impact a federal or state-listed threatened or endangered species and the project will be constructed, operated, and maintained in conformance with the terms and conditions of these approvals.	LS if avoidance of agency-listed sensitive species is feasible; PS if agency-listed sensitive species are present and avoidance is not feasible

B: Beneficial impact   LS: Less than significant impact   PS: Potentially significant impact

Table 1A-1 (Continued)
Summary of Project Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Construction impacts on sensitive species whose presence is not known but could not be excluded from Cal Mat Pit, Sheldon Pit, Strathern Pit, and Vulcan Gravel Processing Plant	PS	**(Design Phase) B-4** Prior to construction of Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit components, onsite field surveys will be conducted at the appropriate time of the year (approximately mid-April to mid-June) to confirm the potential for special status plant and wildlife species to occur on these sites: • Plants. southern tarplant, San Fernando Valley spineflower, slender-horned spineflower, Los Angeles sunflower, Nevin's barberry, Plummer's mariposa lily, mesa horkelia, and Davidson's bush mallow • Wildlife. silvery legless lizard and southwestern pond turtle, orange-throated whiptail, San Diego horned lizard, least Bell's vireo, coastal California gnatcatcher, and San Diego black-tailed jackrabbit If the potential is confirmed for one or more special status species to occur, a qualified biologist will conduct focused surveys for those species in accordance with appropriate survey protocols at the appropriate time of the year. If any special status species are identified during the focused surveys, the proposed facilities will be designed and/or sited to avoid or minimize disturbance and loss of the species during construction. However, depending on the location of sensitive resources at the sites, if any, project redesign that avoids the biological resources while still meeting the flood control objective of the project component may be infeasible. Therefore, if avoidance is not feasible, restoration and/or rehabilitation as described in Mitigation Measure B-2 will be implemented. Additionally, if impacts on a federal or state-listed threatened or endangered species cannot be avoided, USFWS and/or CDFG will be consulted regarding permits required under FESA and/or CESA. All necessary federal and state approvals shall be obtained prior to the implementation of construction activities that would impact a federal or state-listed threatened or endangered species.	LS if avoidance of agency-listed sensitive species is feasible; PS if agency-listed sensitive species are present and avoidance is not feasible

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1A-1 (Continued)
Summary of Project Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Construction impacts to nesting birds protected by the Migratory Bird Treaty Act potentially present at the Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, Strathern Pit, and New Park on Wentworth	PS	**(Pre-Construction) B-5** If feasible, project activities with the potential to disturb native and non-native vegetation and man-made nesting structure shall take place outside of the breeding season (which generally runs from March 1 to August 31 and as early as February 1 for some raptors) for birds protected by the Migratory Bird Treaty Act. If project activities must occur during the breeding season of birds covered by the MBTA, then beginning 30 days prior to construction, weekly bird surveys shall be arranged. The surveys shall continue on a weekly basis with the last survey being conducted no more than 3 days prior to the initiation of clearance/construction work at the site. If a bird covered by the MBTA is detected on the site, then the nesting activity will be monitored to ensure that construction activities do not occur within 300 feet of the nest (500 feet for raptors) until the juvenile birds have fledged and no further nesting attempts are initiated.	LS
Cultural Resources			
• Construction impact on prehistoric resources and paleontological resources	None	None	None
• Construction impact on historical resources at Stonehurst Park, Valley Steam Plant, Roscoe Elementary School, Power Line Easement, and Strathern Pit	LS	None	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1A-1 (Continued)
Summary of Project Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Construction impact on archaeological resources potentially present at Cal Mat Pit, Roscoe Elementary School, Sheldon Pit, Stonehurst Park, Strathern Pit, and Valley Steam Plant	PS	**(Construction Phase) C-1** A professional monitor qualified in historical archaeology shall be present for subsurface work between the surface and 5 feet in depth at the following project component sites: Stonehurst Park, Valley Steam Plant, and Roscoe Elementary School. If potentially important cultural deposits are encountered in the course of construction, work should be temporarily diverted from the vicinity of the discovery until the monitoring archaeologist can identify and evaluate the importance of the find and conduct any appropriate assessment and activities, as necessary. **C-2** On the first day of subsurface work, if any, at Strathern Pit, Cal Mat Pit and Sheldon Pit, a professional monitor qualified in historical archaeology shall be present to assess whether further monitoring might be warranted.	LS
• Unknown buried cultural resources or human remains at all project component sites	LS	**(Construction Phase) C-3** If previously unknown cultural resources are discovered in the course of excavation for project construction at any project site, the construction inspector shall have the authority and responsibility to halt construction until a qualified archaeologist can evaluate the significance and distribution of the materials, and identify future activities needed. If the cultural material discovered is determined to be of potential archaeological significance, the investigation and future activities shall be conducted in consultation with culturally affiliated Native American or other parties, as necessary. **C-4** If human remains are discovered in the course of excavation for project construction, the County Coroner shall be contacted and provisions of State CEQA Guidelines Section 15064.5 would be followed.	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1A-1 (Continued)
Summary of Project Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Construction impact on unknown but potential historical resources (machinery, refuse, or structures related to gravel mining operations) at Strathern Pit, Cal Mat Pit, and Sheldon Pit	PS	**(Design Phase) C-5** During the design phase of Strathern Pit, Cal Mat Pit, and Sheldon Pit, and once site access has been granted by the property owner, LACDPW will conduct on-site surveys to determine presence of original machinery, refuse and/or structures that date from the period of concern. If any are found, LACDPW will evaluate whether they are a historical resource using the criteria described in Section 15064.5(a) of the State CEQA Guidelines. If any equipment and/or structures at Strathern Pit, Sheldon Pit, or Cal Mat Pit are determined to be a historical resource, LACDPW will: • Incorporate the artifact into design of the project component, or • Remove and relocate the artifact to an appropriate location (i.e., museum, public library, or school), or • Document with photographs and engineering drawings	LS
Geology and Soils			
• Impacts related to seismic ground shaking and surface rupture	LS	None	LS
• Impacts related to slope instability at Cal Mat Pit, Sheldon Pit, and Strathern Pit	PS	**(Design Phase) G-1** During detailed design of Cal Mat Pit, Sheldon Pit, and Strathern Pit components, LACDPW will incorporate the recommendations of the geotechnical analysis, which will include optimum slope design for stability and safety, soil compaction or recompaction requirements, surface cover, and potentially other slope stabilizing measures.	LS
• Impacts related to liquefaction potential from proposed stormwater infiltration at Sheldon Pit, Cal Mat Pit, and the Power Line Easement	PS	**(Implementation Phase) G-2** To ensure that stormwater infiltration at Sheldon Pit, Cal Mat Pit, and the Power Line Easement does not result in an increased liquefaction risk, monitoring wells proposed for the Phase 1 projects (Cal Mat Pit, Sun Valley Middle School, and Valley Steam Plant) of the Watershed Management Plan as well as existing wells in the project area will be used to detect any substantial increase in groundwater levels. If monitoring indicates a substantial rise in groundwater levels (i.e., within 30 feet of the surface) at or near Sheldon Pit, Cal Mat Pit, or the Power Line Easement, stormwater would not be infiltrated and would be diverted into storm drains or onto street surfaces.	LS
• Construction impacts on soil erosion	PS	See **W-1** under **Hydrology – Surface and Ground Water Quality**	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1A-1 (Continued)
Summary of Project Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Impacts related to subsidence and expansive soils	LS	None	LS
Hazards and Hazardous Materials			
• Impacts related to potential soil contamination at project component sites	PS	**(Design Phase) H-1** During the detailed design phase of each project component (except Onsite BMPs, Tree Planting & Mulching, and Storm Drains), a Phase I Environmental Site Assessment (ESA) will be conducted to determine the site-specific potential for soil contamination. The Phase I ESA will be conducted in accordance with the latest version of the American Society of Testing and Materials (ASTM) 1527 “Standard Practice for Environmental Site Assessments: Phase I Environmental Assessment Process.” This document outlines the customary practice for performing ESA’s in the United States. Phase I ESA will consist of a review of site-specific documents and historical maps to determine past uses of the site, a site visit to visually inspect the property for signs of potential environmental contamination, and investigation of state and federal environmental regulatory databases (including those maintained by Regional Water Quality Control Board and Department of Toxic Substances Control) to identify recognized hazardous materials usage or spills. For project sites with infiltration, the boundary of the Phase I ESA will include parcels located within 500 feet of the project site boundary to identify active or abandoned landfills or other land uses with the potential for contaminated soils which would be incompatible with infiltration (to be cross-referenced with Mitigation Measure W-4; see Section 4.7.7). If the Phase I ESA concludes that there is no substantial potential for soil contamination, no further action would be required. If the Phase I ESA indicates that there is potential for soil to be contaminated, additional investigation (including soil sampling and analysis) will be conducted to determine the presence and extent of the contamination. If the proposed project would involve disturbance of soil in the contaminated area, soil would be removed and disposed of in compliance with applicable regulations at approved disposal sites.	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1A-1 (Continued)
Summary of Project Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Impacts related to handling of hazardous materials (sodium hypochlorite for stormwater disinfection, potential removal of railroad ties at Valley Steam Plant, and disposal of potentially contaminated sediments during maintenance of stormwater facilities)	LS	None	LS
• Impacts related to potential increase in bird/wildlife air strike hazard at nearby airports	LS	**(Design Phase) H-2** During the detailed design phase of Sheldon Pit, Cal Mat Pit, and Strathern Pit, FAA Western Pacific Regional Office, Burbank Airport, and Whiteman Airport will be notified of the proposed land use change.	LS
• Public health impacts related to potential increase in mosquito habitat	PS	**(Design Phase) H-3** LACDPW, or subsequent operator of the project component (if different), will consult and coordinate with the Greater Los Angeles Vector Control District (GLAVCD) during the detailed design, implementation, and operation phases of the following project components: Sheldon Pit, Strathern Pit, Cal Mat Pit, Power Line Easement, Valley Steam Plant, and Vulcan Gravel Processing Plant. Consultation and coordination with GLAVCD shall include the following actions: • Consult with GLAVCD during the detailed design phase to incorporate design elements intended to minimize the mosquito production potential of the project component(s). • Regularly consult with GLAVCD to identify mosquito management problems, mosquito monitoring and abatement procedures, and opportunities to adjust water and vegetation management practices to reduce mosquito production. Mosquito control measures to be used by GLAVCD could include mosquito fish stocking, and application of Bti, Methoprene, and/or Agnique MMF, as appropriate.	LS
• Impacts related to site security and safety	LS	None	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1A-1 (Continued)
Summary of Project Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
Hydrology (Drainage and Flooding)			
• Beneficial reduction in local and downstream flooding	B	None	B
• Impacts related to dam safety at Strathern Pit, Cal Mat Pit, Sheldon Pit, Valley Steam Plant, Vulcan Gravel Processing Plant, Power Line Easement	LS	None	LS
Hydrology (Surface and Ground Water Quality)			
• Construction impacts on surface water quality related to soil erosion	PS	**(Construction Phase) W-1** The construction contractor will develop and implement a Storm Water Pollution Prevention Plan (SWPPP) for all project components (except Onsite BMPs and Tree Planting and Mulching) that involve constructing, clearing, grading or excavation on areas over 1 acre in size. The following are possible measures to be incorporated into site-specific SWPPPs. Additional sample measures and guidelines for developing SWPPPs are available in California Stormwater Quality Association's Stormwater Best Management Practice Handbook – Construction (CASQA, 2003). Measures to reduce fugitive dust generated during construction (see **Mitigation Measures A-1 through A-10**) will also minimize the potential for soil erosion. • Install perimeter silt fences or hay bales. • Stabilize soils through hydroseeding and use of soil stabilizers. • Install temporary sedimentation basins. • Conduct earth moving activities during the dry season (April through October), as feasible. • Designate storage areas for construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) to keep these materials out of the rain and minimize contact with stormwater. • Conduct regular inspections to ensure compliance with the SWPPP.	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1A-1 (Continued)
Summary of Project Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Construction impacts on surface water quality related to modification of Tujunga Wash	LS	None	LS
• Improvement in surface water quality from implementation of stormwater treatment systems	B	None	B
• General operational impacts on groundwater quality from stormwater infiltration, including impacts on exposed groundwater at Sheldon Pit from the proposed reuse of stormwater for gravel washing	LS	**(Implementation Phase) W-2** LACDPW will prepare an annual vadose zone, surface water, and groundwater quality monitoring report to present the results of the Phase 1 projects to the Stakeholders. LACDPW will work with the Stakeholders to evaluate the effectiveness of the stormwater treatment devices and determine the necessity of additional stormwater treatment prior to subsequent infiltration or for use in wetlands designed to provide wildlife habitat. Where indicated based on water quality concerns, additional stormwater treatment will be installed or infiltration will be discontinued at the relevant site. For sites with constructed wetlands that support wildlife habitat, modifications necessary based on water quality concerns will be designed to retain wetland vegetation or manage the wetlands in accordance with wildlife agency agreements or consultations.	LS
• Groundwater quality impacts related to potential soil contamination at infiltration sites	PS	See **H-1** under **Hazards and Hazardous Materials.**	LS
• Groundwater hydrology impacts (Potential inundation of landfill material at Bradley Landfill from stormwater infiltration)	LS	**(Implementation Phase) W-3** Prior to starting operation of Sheldon Pit, LACDPW will coordinate with Waste Management Inc., the Regional Board, and ULARA Watermaster to develop a contingency plan that will be implemented in the event the groundwater levels at existing monitoring wells around Bradley Landfill reach the "alert level" of 745 feet msl. The contingency plan will outline actions to be taken if the "alert level" is reached (e.g., reduce or stop stormwater infiltration for a period of time until groundwater levels begin to fall).	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1A-1 (Continued)
Summary of Project Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Groundwater hydrology impacts (Potential inundation of landfill materials from stormwater infiltration)	PS	**(Design / Implementation Phases) W-4** If the site-specific Phase I ESA (see Mitigation Measure H-1) indicates that an active or closed landfill (either municipal solid waste or inert construction waste) is located within 500 feet from the project site boundary, a site-specific geotechnical study will be conducted to: 1) characterize the extent and composition of landfill materials; 2) determine whether the landfill materials are releasing methane; 3) and estimate the potential mounding effect from the proposed stormwater infiltration. The results of the geotechnical study will be incorporated into the project design to minimize the potential for project infiltration to result in interaction between infiltrated stormwater and landfill materials or to impact landfill gas releases, if any. Potential design modifications include siting the infiltration facilities away from the landfill and/or partially lining the facilities to direct infiltration away from the landfill. For sites with stormwater infiltration within 500 feet of an active or closed landfill, a groundwater monitoring program will then be developed and implemented to ensure that infiltration does not result in interaction between infiltrated stormwater and landfill materials or impact landfill gas releases. Infiltration would cease at any site where groundwater levels rose to within 10 feet of landfill materials.	LS
• Groundwater hydrology impacts (Potential interference with ongoing cleanup of existing Superfund contamination plume in San Fernando Basin)	LS	None	LS
• Impacts related to the proposed use of Tujunga Spreading Grounds for infiltration of stormwater collected at Strathern Pit (Alternatives 1, 2, and 4)	PS	**(Design Phase) W-5** As part of detailed design of the Strathern Pit component (Alternatives 1, 2, and 4), LACDPW will coordinate with Los Angeles Bureau of Sanitation, LADWP, and ULARA Watermaster's office to evaluate the feasibility of using the Tujunga Spreading Grounds for stormwater infiltration. The evaluation will determine the amount of stormwater that can be infiltrated by the proposed project without adverse effects on landfill methane migration.	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1A-1 (Continued)
Summary of Project Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
Noise			
• Construction noise impact on sensitive receptors	PS	**(Construction Phase)** The following noise mitigation measures (N-1 and N-2) will be implemented during project construction (except Tree Planting & Mulching): **N-1** Construction activities will be limited to the hours allowed by the City of Los Angeles Noise Ordinance (i.e., between 7 a.m. and 9 p.m. on weekdays and between 8 a.m. and 6 p.m. on Saturdays and national holidays) unless written permission has been obtained from the City of Los Angeles Board of Police Commissioners per Section 41.40 of the Los Angeles Municipal Code. **N-2** All mobile construction equipment will be equipped with properly operating mufflers or other noise reduction devices. The following noise mitigation measures (N-3 and N-4) will be implemented during project construction (except Onsite BMPs, Tree Planting & Mulching, and Storm Drains): **N-3** For discrete project component sites, businesses and residences immediately adjacent to the construction site will be notified prior to the start of construction, e.g., via flyers. A toll free number for noise complaints will be included in this notification. **N-4** Prior to the start of construction of the project components, the construction contractor will develop a site-specific noise mitigation plan based on an updated estimate of construction equipment and schedule for each project component. The objective of the mitigation plans will be to reduce noise levels to 75 dBA at the nearest residence and 67 dBA at school sites during project construction. The mitigation plans will identify potential mitigation measures, including installation of sound walls, sound curtains, and other temporary sound barriers; selection of quieter construction procedures and/or equipment; and noise monitoring to verify adherence to the identified mitigation measures. Additional mitigation measures for construction at school sites (i.e., Roscoe Elementary School, Stonehurst Elementary School, and Sun Valley Middle School) will include the following: scheduling the noisier phases of construction on Saturdays, school vacation periods, and/or after regular class hours but before 9 p.m, as feasible; and maintaining ongoing communications with the schools' administrators to address any construction noise-related issues. Coordination with St. Patrick's school will also be conducted prior to the installation of storm drains near this location.	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1A-1 (Continued)
Summary of Project Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Operational noise impacts (operation of pumps, use of vehicles for facility maintenance, and increased traffic to parks)	LS	None	LS
Public Services			
• Construction impact on police and fire protection services from temporary lane and/or road closures (Storm Drains, Street Storage, and catch basins associated with various project components)	PS	**(Pre-Construction Phase)** **P-1** Prior to the start of construction, the fire stations serving the project area will be consulted to review phasing, road/lane closure, and detour plans and to determine fire and emergency medical response requirements. **P-2** The project will comply with all state and local codes and ordinances, and the guidelines found in the Fire Protection and Fire Prevention Plan, and Safety Plan located in the City of Los Angeles General Plan (C.P.C. 19708) **P-3** Prior to the start of construction, the North Hollywood Community Police Station and/or Foothill Community Police Station will be informed, as appropriate, of project-related lane and/or road closures and detour plans. **P-4** Investigate and implement traffic control measures capable of reducing the temporary adverse effects to police and emergency vehicle responses during project construction. Such measures may include the use of flagmen and posting "No Parking" signs along the affected area.	LS
• Operational impact on police and fire protection services	None	None	None

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1A-1 (Continued)
Summary of Project Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Construction impact on school access, student safety, and school commuting routes (Stonehurst Elementary School, Sun Valley Middle School, Roscoe Elementary School, and Patrick's School)	PS	**(Pre-Construction and Construction Phases)** **P-5** Ensure that school buses have access to Sun Valley Middle School, Stonehurst Elementary School, Roscoe Elementary School, and St. Patrick's School during construction. **P-6** Ensure that safe and convenient pedestrian routes to Stonehurst, Roscoe, Sun Valley, and St. Patrick's Schools are maintained. **P-7** Maintain ongoing communication with the administrators of the schools and provide sufficient notice to forewarn children and parents when existing pedestrian and vehicular routes to school will be affected. **P-8** Install appropriate traffic controls (e.g., signs and signals) as needed to ensure pedestrian and vehicular safety. **P-9** As feasible, haul routes will not be routed past the schools except when school is not in session. **P-10** Construction or worker vehicles will not be parked or staged on streets adjacent to the schools. **P-11** All construction areas on or adjacent to schools, including trench areas, operating equipment areas and equipment staging and stockpile areas, will be secured through fencing or other barriers to prevent trespassing and reduce hazards to children and other pedestrians. **P-12** The Project Manager or designee will notify the LAUSD Transportation Branch and the St. Patrick's School of the expected start and ending dates for various portions of the project that may affect traffic through the areas and any potential impact on existing school bus routes.	LS
Recreation			
• Construction impact on existing parks and recreational facilities at schools (Stonehurst Park, Sun Valley Middle School, Roscoe Elementary School, and Stonehurst Elementary School)	LS	None	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1A-1 (Continued)
Summary of Project Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
• Increased acreage and quality of recreational facilities	B	None	B
Traffic and Transportation			
• Temporary impact on traffic in the project area from construction vehicles and equipment • Temporary impact on traffic in the project area from construction activities in the street rights-of-way (Storm Drains, Street Storage, catch basins, etc.)	PS	**(Pre-Construction Phase)** The following mitigation measure will mitigate the significant impacts associated with construction traffic at all project components except Onsite BMPs and Tree Planting & Mulching. Implementation of the mitigation measures would reduce the project's traffic/transportation impacts to a less than significant level. **T-1** A construction traffic management plan shall be developed for each project site that will include but not be limited to such measures as designated haul routes for construction-related traffic (e.g., construction equipment, pickup and dump trucks, and other material delivery trucks), travel time restrictions for construction-related traffic to avoid weekday peak periods on selected roadways, designated site access locations, driveway turning restrictions, temporary traffic controls and/or flaggers, and designated parking/staging locations for workers and equipment. The following mitigation measures will mitigate the significant impacts associated with construction activities in the right-of-way of public streets for pipelines, catch basins, culverts, etc. Implementation of the mitigation measures would reduce the project's traffic/transportation impacts to a less than significant level. **T-2** A construction area traffic control plan and/or detour plan shall be prepared for each location where construction activities would encroach into the right-of-way of a public roadway. The plan would include, but not be limited to such features as warning signs, lights, barricades, cones, lane closures, and restricted hours during which lane closures would not be allowed; e.g., 6:00 to 9:00 a.m. and 3:00 to 6:00 p.m., or as directed by the affected public agency (City of Los Angeles Department of Transportation for most locations). **T-3** Provide advance notification to affected property owners, businesses, residents, etc. of possible driveway blockages or other access obstructions and implement alternate access and parking provisions where necessary. (Continued on following page)	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1A-1 (Continued)
Summary of Project Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
(Continued from previous page)		**T-4** Provide alternative pedestrian and bicycle access/circulation routes where existing facilities such as sidewalks, crosswalks, and bike lanes would be obstructed. **T-5** Coordinate with emergency service providers (police, fire, and ambulance/paramedic agencies) prior to construction to provide information regarding lane closures, construction schedules, driveway blockages, etc. and to develop a plan to maintain or accommodate essential emergency access routes; e.g., plating over excavations, use of detours, etc. **T-6** Coordinate with public transit agencies (e.g., MTA) to provide information regarding lane closures, bus stop disruptions, etc. and to designate alternate pick-up/drop-off locations if appropriate. **T-7** As necessary, obtain a transportation permit from Caltrans for transportation of heavy construction equipment and/or materials which requires the use of oversized-transport vehicles on State highways.	
Operational impacts on traffic from park visitors and maintenance activities	LS	None	LS
Utilities and Service Systems			
• Potential interference with existing utilities within street rights-of-way from construction of Storm Drains, Street Storage, catch basins, etc.	PS	**(Design Phase) U-1** During the preliminary design phase of each project component, the utility service providers will be consulted to identify existing and proposed buried facilities in affected roadways and to determine which utilities require relocation and which can be avoided. If relocation is required, the appropriate utility service provider will be consulted to sequence construction activities to avoid or minimize interruptions in service. **(Pre-Construction Phase) U-2** If utility service disruption is necessary, residents and businesses in the project area will be notified a minimum of two to four days prior to service disruption through local newspapers, direct mailings to affected parties, or public posting of notices.	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1A-1 (Continued)
Summary of Project Impacts and Mitigation Measures

Environmental Impact	Impact Significance	Mitigation Measures	Impact Significance After Mitigation
(Continued from previous page)		**(Construction Phase) U-3** The contractor will be required to excavate around utilities, including hand excavation as necessary, to avoid damage and to minimize interference with safe operation and use. Hand tools must be used to expose the exact location of buried gas or electric utilities.	
• Impact on landfill capacity from generation of solid waste during construction	LS	**(Construction Phase) U-4** The plans and specifications for the proposed project will state that the construction contractor is required to identify and implement programs for minimizing solid waste generated during construction. These programs will include, at a minimum, recycling of asphalt and concrete paving materials, and balance of graded soil on site to the maximum extent feasible.	LS
• Impact on solid waste collection routes during construction of Storm Drains, Street Storage, catch basins, etc.	LS	**(Pre-Construction Phase) U-5** Prior to construction, the City of Los Angeles Bureau of Sanitation will be notified of the construction schedule and planned lane or road closures so that solid waste collection routes and access in the area may be modified accordingly.	LS
• Operational impact related to solid waste generation, sewers, water, and electricity use	LS	None	LS
• Operational impact on power line towers from stormwater infiltration at Valley Steam Plant and Power Line Easement	PS	**(Design Phase) U-6** During preliminary design of Valley Steam Plant and Power Line Easement, a geotechnical investigation will be conducted to assess the characteristics and stability of the soil around the power line towers. If results of the investigation indicate that stormwater infiltration may saturate the soil and affect the stability of the towers, the following changes would be incorporated into the site design: • For the Valley Steam Plant component, the proposed retention basins would be sited to avoid the towers, if possible, or a series of drywells would be constructed so that water would be infiltrated deeper into the ground to avoid saturation of surface soils. • For the Power Line Easement component, a series of drywells would be constructed so that water would be infiltrated deeper into the ground to avoid saturation of surface soils. • Alternatively, for either the Power Line Easement or Valley Steam Plant components, a liner may be installed along the sideslope of the basin closest to the power line towers to prevent infiltration. (The liner would cover only a small portion of the infiltration basin.)	LS

B: Beneficial impact LS: Less than significant impact PS: Potentially significant impact

Table 1A-2
Summary of Future Analyses

Environmental Impact	Future Analyses
Biological Resources	
• Construction impacts on sensitive habitat types whose presence is not known but could not be excluded from Cal Mat Pit, Sheldon Pit, Strathern Pit, and Vulcan Gravel Processing Plant • Construction impacts on special status species whose presence is not known but could not be excluded from Cal Mat Pit, Sheldon Pit, Strathern Pit, Vulcan Gravel Processing Plant, and New Park on Wentworth	Prior to or during the design phase of New Park on Wentworth, a qualified biologist will conduct focused surveys to determine the presence of several special status plant and wildlife species and nesting birds (see **Mitigation Measures B-3 and B-5**). Prior to or during the design phase of Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit, onsite field surveys for biological resources will be conducted to determine the presence of high-value vegetation types and confirm the potential for several special status plant and wildlife species to occur. If the onsite field surveys confirm the potential for one or more of the special status species to occur, a qualified biologist will conduct focused surveys for those species and nesting birds (see **Mitigation Measures B-2, B-4, and B-5**).
Cultural Resources	
• Construction impact on unknown but potential historical resources (machinery, refuse, or structures related to gravel mining operations) at Strathern Pit, Cal Mat Pit, and Sheldon Pit	During the design phase of Strathern Pit, Cal Mat Pit, and Sheldon Pit, LACDPW will conduct on-site surveys to determine presence of original machinery, refuse and/or structures that date from the period of concern (see **Mitigation Measure C-5**).
Geology and Soils	
• Impacts related to slope instability at Cal Mat Pit, Sheldon Pit, and Strathern Pit	Conduct a detailed geotechnical investigation for all project components to define site-specific conditions, including slope instability at gravel pits (Cal Mat Pit, Sheldon Pit, and Strathern Pit).
• Liquefaction and seismic stability impacts	State of California Division of Mines and Geology Special Publication 117 "Guidelines for Evaluation and Mitigating Seismic Hazards in California" will be reviewed to determine the necessity of detailed liquefaction and seismic stability analyses.
Hazards and Hazardous Materials	
• Impacts related to potential soil contamination at project component sites	Conduct Phase I Environmental Site Assessment (ESA) as described in **Mitigation Measure H-1**.
Hydrology (Drainage and Flooding)	
• Impacts related to dam safety at Strathern Pit, Cal Mat Pit, Sheldon Pit, Valley Steam Plant, Vulcan Gravel Processing Plant, Power Line Easement	During detailed design of Strathern Pit, Cal Mat Pit, Sheldon Pit, Valley Steam Plant, Vulcan Gravel Processing Plant, Power Line Easement, determine whether the proposed berm structures would be considered jurisdictional dams by the Division of Safety of Dams (DSOD). If jurisdictional, file plans and specifications with the DSOD, consult with DSOD staff regarding dam safety related issues, and incorporate results of consultation into the final design.

Table 1A-2 (Continued)
Summary of Future Analyses

Environmental Impact	Future Analyses
Hydrology (Surface and Ground Water Quality)	
• Construction impacts on surface water quality related to modification of Tujunga Wash	As part of detailed design for the Sheldon Pit component, consult with the U.S. Army Corps of Engineers, Regional Board, and California Department of Fish and Game regarding the proposed modification of Tujunga Wash. Obtain necessary federal and state approvals, including CWA Section 404 permit, CWA Section 401 water quality certification or waiver or Fish and Game Code Section 1601 Streambed Alteration Agreement, prior to the implementation of construction activities.
• General operational impacts on groundwater quality from stormwater infiltration, including impacts on exposed groundwater at Sheldon Pit from the proposed reuse of stormwater for gravel washing	Prepare and present an annual vadose zone and groundwater quality monitoring report for Phase 1 project components as described in **Mitigation Measure W-2**.
• Groundwater quality impacts related to potential soil contamination at infiltration sites	See **Hazards and Hazardous Materials.**
• Impacts related to the proposed use of Tujunga Spreading Grounds for infiltration of stormwater collected at Strathern Pit (Alternatives 1, 2, and 4)	Coordinate with LADWP and evaluate feasibility of using Tujunga Spreading Grounds as described in **Mitigation Measure W-5**.
Recreation	
• Construction impact on existing parks and recreational facilities at schools (Stonehurst Park, Sun Valley Middle School, Roscoe Elementary School, and Stonehurst Elementary School)	During detailed design, the timing and duration of temporary closures of recreational facilities at Stonehurst Park, Roscoe Elementary School, Stonehurst Elementary School, and Sun Valley Middle School will be updated.
Utilities and Service Systems	
• Operational impact on power line towers from stormwater infiltration at Valley Steam Plant and Power Line Easement	Conduct additional geotechnical investigation for the Power Line Easement and Valley Steam Plant as described in **Mitigation Measure U-6**.

Section 2
Introduction

2.1 PROJECT BACKGROUND

The Sun Valley Watershed Management Plan is a multi-purpose flood control program to solve the local flooding problem in the Sun Valley Watershed area while increasing water conservation, recreational opportunities, and wildlife habitat, and reducing stormwater pollution. Implementation of the Watershed Management Plan will include construction of various stormwater facilities within the watershed, both small and large-scale, including those for: retention and/or infiltration, conveyance, and distribution for reuse.

2.1.1 Need for the Project

Sun Valley Watershed is faced with a critical need to solve its frequent flooding problems. This highly urbanized watershed, which is located in the City of Los Angeles and covers an area of approximately 4.4 square miles, is currently not served by any comprehensive underground storm drain system. During rainfall events, stormwater flows are conveyed along street surfaces, and water collects at several of the major intersections in the area, including Tuxford Street and San Fernando Road and Vineland Avenue at Burbank Airport. Even moderate rainfall causes flooding on the order of 2 to 3 feet in depth, impeding pedestrian and vehicle traffic. Major streets such as Sheldon Street, Tuxford Street, Glenoaks Boulevard, Penrose Street, Tujunga Avenue, and Cahuenga Boulevard are affected.

To alleviate the area's flooding problem, a storm drain project called Project 9250 was initially proposed in 1970 by the County of Los Angeles Department of Public Works (LACDPW), the agency with the primary responsibility for flood control within the Los Angeles County Flood Control District. The project involved constructing a system of storm drains throughout the watershed so that majority of the stormwater flows would be conveyed below the streets. Project 9250 was never implemented, primarily due to lack of funding and community support.

Storm drains have been the traditional approach to urban flood control, because they quickly and efficiently convey stormwater away from people and properties. However, storm drains also convey polluted urban runoff collected from street surfaces into the rivers and the ocean. In addition, flooding in downstream communities can be aggravated when storm drains are constructed in upstream areas and convey flows more quickly to the downstream areas.

LACDPW has proposed the Sun Valley Watershed Management Plan as an alternative, multipurpose approach to stormwater management that responds to the need to integrate flood control, stormwater pollution reduction, and water conservation efforts. The Watershed Management Plan also addresses additional community issues, such as the lack of recreational resources, wildlife habitat, and aesthetic amenities in the watershed.

2.1.2 Sun Valley Watershed Stakeholders Group

Public participation has been integral to the development of the Sun Valley Watershed Management Plan. In 1998, LACDPW invited area residents, state and local agencies, local businesses, and environmental groups to form the Sun Valley Watershed Stakeholders Group (Stakeholders) (see **Table 2-1**). The purpose of the Stakeholders is to develop a holistic solution to the area's flooding problem that would be an alternative to using only traditional storm drains and would provide multiple benefits for the community. Since late 1999, the Stakeholders have been meeting on average once a month to explore ideas for the Watershed Management Plan, implement short-term solutions to flood-related problems, and plan public outreach activities. The group's monthly meetings are open to the public and are facilitated by LACDPW.

The mission of the Stakeholders is:

> *"…to solve the local flooding problem while retaining all stormwater runoff from the watershed, increasing water conservation, recreational opportunities, and wildlife habitat, and reducing stormwater pollution."*

Table 2-1
Organizations Involved in the Sun Valley Stakeholder Process to Date

A-Mehr, Inc.	David Evans and Associates, Inc.
American Society of Civil Engineers	Enartec, Inc.
California Coastal Coalition	Fresh Creek Technologies
California Department of Fish and Game	LA Byproducts, Inc.
California Department of Parks and Recreation	Land Design Consultants, Inc
California Department of Transportation	Los Angeles Regional Water Quality Control Board
California Native Plant Society	Los Angeles Unified School District
California State Assemblymember Cindy Montañez	Los Angeles/San Gabriel Rivers Watershed Council
California State Senator Richard Alarcon	Los Cerritos Wetland Stewardship, Inc.
California Wildlife Conservation Board	Lynne Dwyer & Associates
City of Burbank	MWH
City of Burbank Department of Public Works	North East Trees
City of La Cañada Flintridge	Rick Goacher Planning, Inc.
City of Los Angeles Department of Environmental Affairs	San Gabriel & Lower LA Rivers & Mount. Conservancy
	Southern California Association of Governments
City of Los Angeles Department of Public Works	San Gabriel Valley Mosquito and Vector Control District
City of Los Angeles Department of Recreation and Parks	Sun Valley Chamber of Commerce
City of Los Angeles Department of Water and Power	Sun Valley Neighborhood Improvement Organization
City of Los Angeles Councilmember Greuel's Office	Targhee Inc.
City of Los Angeles Councilmember Padilla's Office	TreePeople
City of Los Angeles Councilmember Cardenas' Office	Upper Los Angeles River Area Watermaster
City of Los Angeles Councilmember LaBonge's Office	U.S. Army Corps of Engineers
City of San Fernando	U.S. Department of the Interior National Park Service
Civiltec Engineering, Inc.	U.S. Environmental Protection Agency
Congressman Brad Sherman	Vulcan Materials Company
Congressman Howard Berman	Vulcan Solution Strategies, Inc.
County of Los Angeles Department of Public Works	
County of Los Angeles Sanitation Districts	
County of Los Angeles Supervisor Zev Yaroslavsky	

2.1.3 Project Funding

In addition to the internal funding sources of LACDPW, various external grants and other funding opportunities will be sought to cover the cost of the project. As a multi-purpose flood control project, the Sun Valley Watershed Management Plan has the potential to attract multiple funding partners, such as state and local grants that provide funding for watershed programs, water quality improvement projects, water conservation, and parks and open space. Potential sources of funding that will be available in the near future include Proposition 13 (Watershed Protection, Nonpoint Source Pollution, and Urban Water Conservation Capital Outlay); Proposition 13/CALFED Watershed Program; AB 303 Local Groundwater Management Assistance Act of 2000; 319 Program (Nonpoint Source Implementation); Proposition 40 (Murray-Hayden, Roberti-Z'berg-Harris, and Urban Park Act); Proposition 50 (Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002); and City of Los Angeles Proposition K. Additional information on project funding opportunities is available in the Funding Report. (See **Section 2.9** for availability of related documents.)

2.2 PROJECT OBJECTIVES

The objectives of the Sun Valley Watershed Management Plan have been developed by LACDPW based on the mission statement of the Stakeholders. The primary objective is to reduce local flooding in the project area. Secondary objectives are: increase water conservation, increase recreational opportunities, increase wildlife habitat, improve water quality, provide additional environmental benefits, and increase multiple agency participation. Each objective is described in further detail below.

2.2.1 Reduce Local Flooding

The primary objective of the project is to alleviate the flooding problems within the Sun Valley Watershed. Each of the objectives below is consistent with this primary objective. The short-term goal (i.e., to be implemented in 1 to 2 years) is to reduce flooding occurrences at key areas within the watershed during one-year frequency, 24-hour storms. These locations include: 1) intersection of San Fernando Road and Tuxford Street, 2) intersection of Tujunga Avenue and Strathern Street, and 3) the neighborhood south of Tujunga Avenue and Strathern Street. The long-term goal (i.e. to be implemented in 6 to 8 years) is to reduce flooding occurrences throughout the watershed to levels consistent with LACDPW standards (**see Section 4.6**).

2.2.2 Increase Water Conservation

Under existing conditions, much of the stormwater generated within Sun Valley Watershed is lost to the Los Angeles River as urban runoff. This is a result of the increase in impervious surfaces (e.g., roads, parking lots, and rooftops) that has accompanied the area's urbanization over the past several decades. Flood control facilities can be designed so that stormwater is captured within the watershed and utilized for water conservation. The general goal for water conservation is to retain all stormwater runoff within the watershed for rainfall events up to the 50-year frequency storm.

Potential uses of captured stormwater include: 1) groundwater recharge to augment the local water supply, and 2) replacement of existing uses that do not require potable water. The proposed project aims to infiltrate at least 1,000 acre-feet per year of stormwater to recharge groundwater. Existing water uses that do not require potable water such as gravel washing and landscape irrigation are considered for substitution with captured stormwater.

2.2.3 Increase Recreational Opportunities

Increases in recreational opportunities and open space areas improve the quality of life in a community. Flood control facilities can be designed to also serve as parks or open space to provide increased recreational opportunities for the residents of the Sun Valley Watershed. The project aims to increase the acreage of parks and open space for recreation, increase public access to parks and open space, and increase the proportion of green areas within public and private properties.

2.2.4 Increase Wildlife Habitat

The Sun Valley Watershed currently has very few habitat areas suitable for wildlife. Flood control facilities can be designed to also serve as wildlife habitat areas. The proposed project aims to increase and improve wildlife habitat within the watershed. Specific goals include: 1) increasing the number of species on a parcel, 2) increasing the ratio of native to non-native species on a parcel, 3) increasing the diversity of native habitat types, and 4) connecting existing adjacent significant habitat areas to allow for intermixing and increased genetic diversity.

2.2.5 Improve Water Quality

Stormwater runoff from urban land uses can contribute pollutants to downstream surface waters. The project aims to improve the water quality of the Los Angeles River through stormwater management within Sun Valley Watershed, which is a tributary of the river.

Specific goals for improving water quality include:

- Reducing the pollutant load entering the Los Angeles River by retaining all stormwater runoff within the watershed up to the 50-year frequency storm
- Improving the quality of urban runoff through the use of stormwater quality Best Management Practices
- Proactively enforcing regulations on illegal discharge by controlling pollution at its source
- Educating the public on responsible watershed management practices
- Maintaining or improving existing groundwater quality

2.2.6 Provide Additional Environmental Benefits

Implementation of alternative flood control strategies can provide many environmental benefits in addition to the ones discussed above. For example, tree planting can help reduce urban runoff while providing shade for buildings, resulting in lower energy needs for air conditioning. The proposed project aims to maximize these types of environmental benefits, including reduced energy use, improved air quality, and reduction of the solid waste stream to landfills.

2.2.7 Increase Multiple Agency Participation

By promoting multi-agency participation, the proposed project aims to encourage a more involved government and community, attract multiple funding partners, work with local schools to provide aesthetic and other benefits for their campuses, increase public awareness of watershed issues, and develop a model for similar projects in the future.

2.3 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT (EIR)

2.3.1 CEQA Requirements

Pursuant to the California Environmental Quality Act (CEQA), discretionary decisions by public agencies regarding certain public and private projects are subject to environmental review. The proposed Sun Valley Watershed Management Plan (proposed project) must comply with CEQA because it is a “project” as defined by Section 15378 of the State CEQA Guidelines.

This Program Environmental Impact Report (Program EIR) has been prepared by LACDPW in compliance with the CEQA Statutes (Public Resources Code Section 21000 *et. seq.*) and the State CEQA Guidelines (Title 14, California Code of Regulations Section 15000 *et. seq.*) as amended.

The purpose of this Program EIR is: 1) to fully disclose to the project’s decision-makers, responsible agencies, interested parties, and the general public the significant or potentially significant environmental effects of implementing the proposed project; 2) to identify possible ways to avoid or reduce adverse impacts; and 3) to describe reasonable alternatives to the proposed project.

2.3.2 Program EIR Approach

The proposed project, the Sun Valley Watershed Management Plan, is a set of policies and actions to address the community’s flooding problems and water quality issues while providing a number of additional benefits. Pursuant to the State CEQA Guidelines Section 15168, this document has been prepared as a Program EIR to consider the environmental impacts, mitigation measures, and alternatives of the proposed Watershed Management Plan as a whole. This approach avoids duplication, allows the lead agency to consider broad policy alternatives and mitigation measures at an earlier time when there may be more flexibility to address the issues, and addresses cumulative impacts that might be overlooked in a project-level EIR.

The proposed Watershed Management Plan is comprised of multiple components. LACDPW has developed four sample alternatives of the Watershed Management Plan by combining different subsets of the plan components to form each alternative. This Program EIR includes an evaluation of each of the project components and all four alternatives, as defined by LACDPW, as well as a theoretical worst-case alternative. The worst-case alternative is defined individually for each environmental topic by combining plan components in a manner that would have the maximum adverse impact with respect to that topic. For example, the theoretical worst-case alternative for air quality, noise, and traffic issues is the combination of components that would generate the greatest construction impacts, i.e. all components. The objective of this approach is to facilitate the implementation of the Watershed Management Plan by maximizing the flexibility in the future use of this document.

Because this document is a Program EIR, it generally contains less detail than typical development project EIRs. For some components of the project, LACDPW has not yet selected specific sites (i.e., Onsite BMPs, Tree Planting and Mulching, and alignment of the Street Storage component) and determined construction details, and operation plans have not been developed. The level of detail in the impact analysis reflects the level of detail in the project description itself. Project-level CEQA analysis is provided for certain components of the plan for which adequate information on facility locations, construction details, and operation plans currently exist.

In the future, as individual project components are proposed for implementation, LACDPW will evaluate whether the Program EIR adequately evaluates the environmental effects of each component. Based on the results of the evaluation, one of the following will be prepared: 1) a written checklist documenting the decision that the environmental effects of the specific project component was covered by the Program EIR, 2) an Initial Environmental Study (IES) and a Negative Declaration, or 3) a site-specific “second-tier” EIR.

As described in **Section 2.1.3,** one of the potential funding sources for the proposed project is the Proposition 13/CALFED Watershed Program. The CALFED Record of Decision requires that environmental review of actions funded with money designated for meeting CALFED purposes tier off of the CALFED Final Programmatic Environmental Impact Statement/Environmental Impact Report (EIS/EIR) (CALFED Bay-Delta Program, 2000). Based on a review of the CALFED EIR/EIS, no significant adverse cumulative impacts were found to occur with the proposed project. The proposed project is consistent with several CALFED programs, including water quality, water use efficiency, and watershed management.

2.4 AGENCIES AND APPROVALS

2.4.1 Lead Agency

LACDPW is the lead agency pursuant to State CEQA Guidelines Section 15367 for this Program EIR. A lead agency is the public agency that has the principal responsibility for carrying out or approving a project subject to CEQA. The lead agency is responsible for preparing the environmental documents on a project according to the full disclosure requirements of CEQA.

LACDPW is a public agency responsible for the design, construction, operation, maintenance, and repair of roads, bridges, airports, sewers, water supply, flood control, and water conservation facilities. In August 2000, a new Watershed Management Division was created within LACDPW to integrate and coordinate activities that affect the natural resources and water quality of the watersheds within the county. Services that were brought together under the Watershed Management Division include flood protection, water conservation, preserving and creating open space for recreation and habitat, and reducing pollution of water resources.

2.4.2 Responsible Agencies and Approvals

Under CEQA, a responsible agency is a public agency, other than the lead agency, which has responsibility for implementing or approving a project. A responsible agency typically has permitting authority or approval over some aspect of a proposed project. The responsible agency relies on the lead agency's environmental document in acting on whatever aspect of the project requires its approval. The lead agency is required to consult with responsible agencies and solicit comments from them regarding the choice and content of the environmental document.

Responsible agencies expected to review the Program EIR and issue permits or approvals for individual component of the Program are summarized in **Table 2-2**.

Table 2-2
List of Potential Permits and Approvals

Agency	Potential Permits/Approvals/Reviews (Relevant Project Components)
Federal Agencies	
U.S. Army Corps of Engineers	• Clean Water Act Section 404 Permit for Tujunga Wash Diversion and maintenance of created wetlands
U.S. Environmental Protection Agency	• Potential funding source
U.S. Fish and Wildlife Service	• Federal Endangered Species Act Section 10(a) coordination, if threatened or endangered species are found during future onsite biological resources survey at New Park on Wentworth, Cal Mat Pit, Sheldon Pit, or Strathern Pit, or if created wetlands attract threatened or endangered species to specific project components after project implementation
State Agencies	
California Department of Fish and Game	• State Endangered Species Act coordination, if threatened or endangered species are found during future onsite biological resources survey at New Park on Wentworth, Cal Mat Pit, Sheldon Pit, or Strathern Pit, or if created wetlands attract threatened or endangered species to specific project components after project implementation
California Department of Health Services	• Project review
California Department of Parks and Recreation, Los Angeles District	• Potential funding source
California Department of Transportation, District 7	• Encroachment permit or easement for Tuxford Green • Transportation permit for transportation of heavy construction equipment and/or materials which requires the use of oversized-transport vehicles on State highways
California Department of Water Resources, Division of Safety of Dams	• Approval of designs of bermed retention basins (Cal Mat Pit, Sheldon Pit, Strathern Pit, Vulcan Gravel Processing Plant, Valley Steam Plant, and Power Line Easement)
California Regional Water Quality Control Board, Los Angeles Region	• Clean Water Act Section 401 Water Quality Certification, related to Section 404 Permit for Tujunga Wash Diversion • NPDES permits or waste discharge requirements for dewatering during construction, if applicable • NPDES permit for construction sites over 1 acre

Table 2-2 (Continued)
List of Potential Permits and Approvals

Agency	Potential Permits/Approvals/Reviews (Relevant Project Components)
Regional Agencies	
South Coast Air Quality Management District	• Permits for temporary electric generation at construction sites, if applicable • Potential funding source
Upper Los Angeles River Area Watermaster	• Project review
Los Angeles Unified School District	• Approval of project components involving LAUSD school sites (Roscoe Elementary School, Stonehurst Elementary School, and Sun Valley Middle School)
Southern California Regional Rail Authority	• Right-of-way engineer review if storm drain installation would impact SCRRA right-of-way. If new storm drains or other drainage structures cross under the railroad, construction of such structures would require a Right-of-Entry Agreement and license agreements from MTA (SCRRA member agency). • Approval from Union Pacific Railroad (UPRR) for projects affecting their property along the SCRRA right-of-way on the Ventura County Line
County and City Agencies	
Los Angeles County Metropolitan Transportation Authority	• Approval of relocation of MTA bus stop (potentially a part of Tuxford Green component)
City of Los Angeles, Department of Recreation and Parks	• Operation and maintenance of new parks created under the proposed project (Cal Mat Pit, Sheldon Pit, Strathern Pit, New Park on Wentworth, and Power Line Easement) • Approval of modification to Stonehurst Park (Stonehurst Park)
City of Los Angeles, Department of Water and Power	• Easement or other approval for modifications to LADWP properties (Valley Steam Plant and Power Line Easement) • Permission to route stormwater from surrounding industrial/commercial area onto the Valley Steam Plant property • Encroachment of power line right-of-ways
City of Los Angeles, Department of Public Works	• Easements for use of City property (Tuxford Green) • Potential funding source • Joint construction of components
City of Los Angeles, Department of Environmental Affairs	• Transfer of Solid Waste Facilities Permit for Cal Mat Pit
City of Los Angeles, Departments of Planning and Building and Safety	• Approval of amendment to mine reclamation plans (Sheldon Pit and Cal Mat Pit)

2.5 EIR PROCESS

2.5.1 Initial Environmental Study and Notice of Preparation

The Notice of Preparation (NOP) and IES for this Program EIR was filed by LACDPW with the State Clearinghouse in November 2002, and were distributed to responsible agencies and interested parties for a 30-day review and comment period ending December 11, 2002. Copies of the NOP and IES are included as **Appendix B**.

LACDPW received 13 comment letters on the NOP. CEQA related comments were also received during the CEQA scoping meeting held on November 20, 2002. The written comments submitted on the NOP and comments provided at the CEQA scoping meeting are presented in **Appendix B**. The comments received included issues related to groundwater quality impacts from stormwater infiltration, construction impacts on utilities, traffic/transportation facilities, air quality, and schools, and impact on public health (creation of mosquito habitat).

2.5.2 Draft and Final Program EIR

The Draft Program EIR for the Sun Valley Watershed Management Plan was issued for public review on October 24, 2003. The Notice of Availability (NOA) and the Draft Program EIR were mailed to a total of 65 agencies, organizations, and interested individuals. In addition, the NOA was mailed to 10 regional Native American Tribal representatives and over 2,400 property owners in the project area. The NOA was filed with the Los Angeles County Clerk for public posting, and the Notice of Completion, NOA, and the Draft Program EIR were submitted to the State Clearinghouse. Copies of the Draft Program EIR were made available for public review at the LACDPW office in Alhambra, 10 local and area libraries, and on the Sun Valley Watershed website. The public review and comment period lasted for 45 days from October 24 through December 8, 2003. In addition, LACDPW held a public meeting on the Draft Program EIR on October 29, 2003 at Sun Valley Middle School. Comments were received in English and Spanish (with a simultaneous interpreter) during the public meeting.

This Final Program EIR presents agency and public comments received on the Draft Program EIR, as well as responses to these comments (see **Appendix H**). Following publication, the Final Program EIR will be certified by the County of Los Angeles Board of Supervisors along with the adoption of the Sun Valley Watershed Management Plan and the Mitigation Monitoring and Reporting Plan.

2.5.3 Environmental Review Subsequent to the Program EIR

In the future, as individual project components are proposed for implementation, LACDPW will evaluate whether the Program EIR adequately evaluates the environmental effects of that component. If LACDPW determines that the environmental effects of the project component were covered in the Program EIR, a written checklist will be used to document the decision, and no additional CEQA documents would be required for that project component. As required by CEQA, if a project component is determined to have new effects that were not covered by the Program EIR, an IES and a Negative Declaration or a site-specific "second-tier" EIR will be prepared. The Program EIR will serve as the foundation for any future Negative Declarations or second-tier EIRs.

2.6 SCOPE OF THE EIR

Based on the preliminary findings of and comments to the IES, LACDPW concluded that preparation of an EIR is required because the proposed project has the potential to have significant environmental impacts on the following environmental issues:

- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Public Services
- Recreation
- Transportation and Traffic
- Utilities and Service Systems

Based on the results of the IES, LACDPW determined that the proposed project would have no impact or less than significant impact with respect to the environmental issues listed below. Therefore, these environmental issues have been excluded from analysis in this Program EIR.

- Aesthetics
- Agricultural Resources
- Land Use
- Mineral Resources*
- Population and Housing

* The IES indicated that impacts on mineral resources related to the use of Boulevard Pit, the only actively mined gravel pit considered for use by the project, are potentially significant. However, since the publication of the IES, Boulevard Pit was excluded from the list of proposed project components. Therefore, issues related to mineral resources have been excluded from the analysis presented in Section 4 of this Program EIR. Potential impacts on mineral resources related to the use of Boulevard Pit are discussed in **Section 7, Alternatives**.

2.7 AREAS OF KNOWN CONTROVERSY

In the course of preparation of the Watershed Management Plan and the Program EIR, the following issues of controversy have been identified:

- Proposed infiltration of stormwater may potentially have adverse impacts on the groundwater quality of the San Fernando Basin.
- Due to site access issues, field surveys for biological and cultural resources could not be completed for the Cal Mat Pit, Sheldon Pit, and Strathern Pit components within the timeframe of Program EIR preparation. Therefore, project impacts related to biological and cultural resources could not be fully evaluated for these project components.

These issues are addressed in detail in this document.

2.8 ORGANIZATION OF THE PROGRAM EIR

The Program EIR is organized into the following major sections.

Table of Contents

Section 1 – Summary. A summary of the contents of the Program EIR

Section 2 – Introduction. Background, project objectives, lead agency identification, the purpose and overview of the Program EIR process, scope of the Program EIR, responsible agencies and approvals, and areas of known controversy

Section 3 – Project Description. Project location, detailed description of the project components and final four alternatives, project implementation, and project monitoring plan

Section 4 – Environmental Setting, Impacts, and Mitigation Measures. Description of the environmental setting, criteria for determining impact significance, analysis of project-related impacts, and description of mitigation measures for each environmental topic. This section includes analyses of each project component individually, the four County-defined Watershed Management Plan alternatives, and the theoretical worst-case alternative for each topic

Section 5 – Cumulative Impacts. A discussion of past, present and reasonably anticipated future activities that could have additive impacts with those of the proposed project

Section 6 – Additional CEQA Analysis. Additional analyses required by CEQA, including irreversible environmental changes, unavoidable environmental impacts, growth inducing impacts, and consistency with regional and local planning

Section 7 – Alternatives. A discussion of the impacts of project alternatives as required by CEQA. Alternatives evaluated include the No Project Alternative, the Project 9250 alternative, and the Boulevard Pit alternative. Analyses of the four County-defined Watershed Management Plan alternatives and the theoretical worst-case alternative are discussed in Section 4 above

Appendices. List of references, acronyms and abbreviations used, organizations and persons consulted, preparers of the Program EIR, Notice of Preparation and comments received, and technical materials and data supporting the analysis or contents of this Program EIR

2.9 RELATED DOCUMENTS

The Sun Valley Watershed Management Plan and the following documents prepared in the process of developing the Watershed Management Plan are available for public review during regular office hours at the County of Los Angeles Department of Public Works (900 South Fremont Avenue, Alhambra, California 91803; Mr. Vik Bapna; Phone 626-458-4363).

- **Sun Valley Watershed Management Plan.** Presents the Watershed Management Plan, and summarizes the contents of the six technical memoranda and Phase 1 project concept reports. (May, 2004)
- **Phase 1 Project Concept Reports.** Includes the concept designs for the following five Phase 1 projects:
    - Cal Mat Pit (October, 2002)
    - LADWP Valley Steam Plant (October, 2002)
    - Tuxford Green (October, 2002)
    - Vulcan Gravel Processing Plant (October, 2002)
    - Sun Valley Middle School (October, 2002)
- **Monitoring Plan for the Sun Valley Watershed Pilot Program.** Presents the water quality and flood control/water conservation monitoring program for the five Phase 1 projects identified above. (September, 2002)
- **Technical Memorandum No. 1.** Project Objectives, Best Management Practices Evaluation, and Opportunities and Constraints Analysis. (April, 2002)

- **Technical Memorandum No. 2.** Hydrology Model Modifications, Results and Linkages. (March, 2002 - Draft)
- **Technical Memorandum No. 3.** Development and Evaluation of Initial 22 Alternatives. (August, 2002)
- **Technical Memorandum No. 4.** Development and Evaluation of Six Alternatives. (January, 2002)
- **Technical Memorandum No. 5.** Development and Evaluation of Final Four Alternatives. (April, 2003)
- **Technical Memorandum No. 6.** Agencies Coordination, Policy or Regulatory Changes and Recommendations. (*In progress*)
- **Funding Report.** Identifies federal, state, regional and local funding sources that may help supplement existing County revenue streams to support implementation of the Sun Valley Watershed Management Plan. (May, 2003)

Section 3
Project Description

3.1 INTRODUCTION

The proposed project, Sun Valley Watershed Management Plan, is a long-range plan which provides a blueprint for a multi-purpose flood control program in the project area. The plan consists of multiple components, each designed to manage stormwater runoff and reduce flooding while achieving other project objectives such as water conservation, improved water quality, increased recreational opportunities and wildlife habitat, improved air quality, and energy conservation. (See **Section 2.2** for more details on project objectives.)

The potential plan components included in the Sun Valley Watershed Management Plan are listed below:

- Cal Mat Pit
- New Park on Wentworth
- Onsite Best Management Practices (BMPs)
- Parking Lot on Sherman Way
- Power Line Easement
- Roscoe Elementary School
- Sheldon Pit and Tujunga Wash Diversion
- Stonehurst Elementary School
- Stonehurst Park
- Storm Drains
- Strathern Pit
- Street Storage
- Sun Valley Middle School
- Sun Valley Park*
- Tree Planting and Mulching
- Tuxford Green
- Valley Steam Plant
- Vulcan Gravel Processing Plant

The proposed facilities and actions associated with each component are described below in **Section 3.4**. The majority of the components involve construction and operation of stormwater storage facilities, such as surface basins and underground tanks to hold stormwater collected within the watershed. The collected stormwater would undergo various processes of pollutant removal and treatment (see **Section 4.7** for details) before being used to recharge groundwater, reused for non-potable purposes such as irrigation, or both. Where appropriate, stormwater storage facilities have been designed to provide recreational facilities and/or wildlife habitat areas. In addition, catch basins and storm drains are proposed to collect and convey runoff and reduce flows carried on street surfaces.

By combining different subsets of these plan components, LACDPW has developed four alternatives of the Watershed Management Plan. The four alternatives and their screening process are described in **Section 3.5**.

* In order to collect data on the effectiveness of the proposed stormwater management projects, Sun Valley Park was identified by LACDPW as a pilot project. It is included in the Sun Valley Watershed Management Plan but is being implemented on an accelerated schedule. LACDPW has completed the concept design. A Notice of Exemption from CEQA (under Sections 15303, 15304, and 15306 of State CEQA Guidelines) was completed and filed with the County Clerk in May 2003. Therefore, for the purpose of this Program EIR, Sun Valley Park is not a part of the proposed project, but is a related project (see **Section 5, Cumulative Impacts**).

Five of the project components have been identified as Phase 1 projects. The objective of the Phase 1 projects is to demonstrate the effectiveness of non-traditional stormwater management techniques used throughout the Watershed Management Plan. The Phase 1 projects are intended to be completed in a relatively short timeframe (1 to 3 years) and accomplish visible results to continue to build community support for the overall Watershed Management Plan. The five Phase 1 projects are:

- Cal Mat Pit (included in Alternatives 3 and 4 only)
- Sun Valley Middle School (all alternatives)
- Tuxford Green (all alternatives)
- Valley Steam Plant (all alternatives)
- Vulcan Gravel Processing Plant (all alternatives)

3.2 PROJECT LOCATION

The proposed project area is the Sun Valley Watershed, which is within the City of Los Angeles, Los Angeles County (**Figure 3-1**). It is located approximately 14 miles northwest of downtown Los Angeles in the northeastern portion of San Fernando Valley, near the intersection of Interstate 5 (Golden State Freeway) and State Highway 170 (Hollywood Freeway). The project area encompasses the communities of Sun Valley-La Tuna Canyon and North Hollywood. The watershed is approximately bordered by Tujunga Wash and Hansen Spreading Grounds on the west, Burbank-Glendale-Pasadena Airport on the east, Hansen Dam on the north, and Burbank Boulevard on the south. The watershed is approximately 2,800 acres (4.4 square miles) in size, and is approximately 6 miles in length from north to south.

The proposed project is comprised of multiple components located throughout Sun Valley Watershed. The boundaries of the watershed and locations of all potential components are shown on **Figure 3-2**. Note, not all of the components shown would be implemented, as described in **Section 3.5 – Alternatives Description.** For those components that vary in size depending on the alternative (i.e., Power Line Easement, Street Storage, and BMP participation), the maximum extent of the project site is shown.

3.3 ENVIRONMENTAL SETTING

The Sun Valley Watershed is a highly urbanized watershed that drains into the Los Angeles River, which is located approximately 2 miles from the southern end of the watershed. Other surface water features in the vicinity include the Tujunga Wash and the Hansen Dam/Lake. The watershed is located within the eastern portion of the San Fernando Valley Groundwater Basin. Topographic features surrounding the project area include the Verdugo Mountains to the east, the San Gabriel Mountains to the north, and the Santa Monica Mountains to the south.

Figure 3-1
Regional Location Map

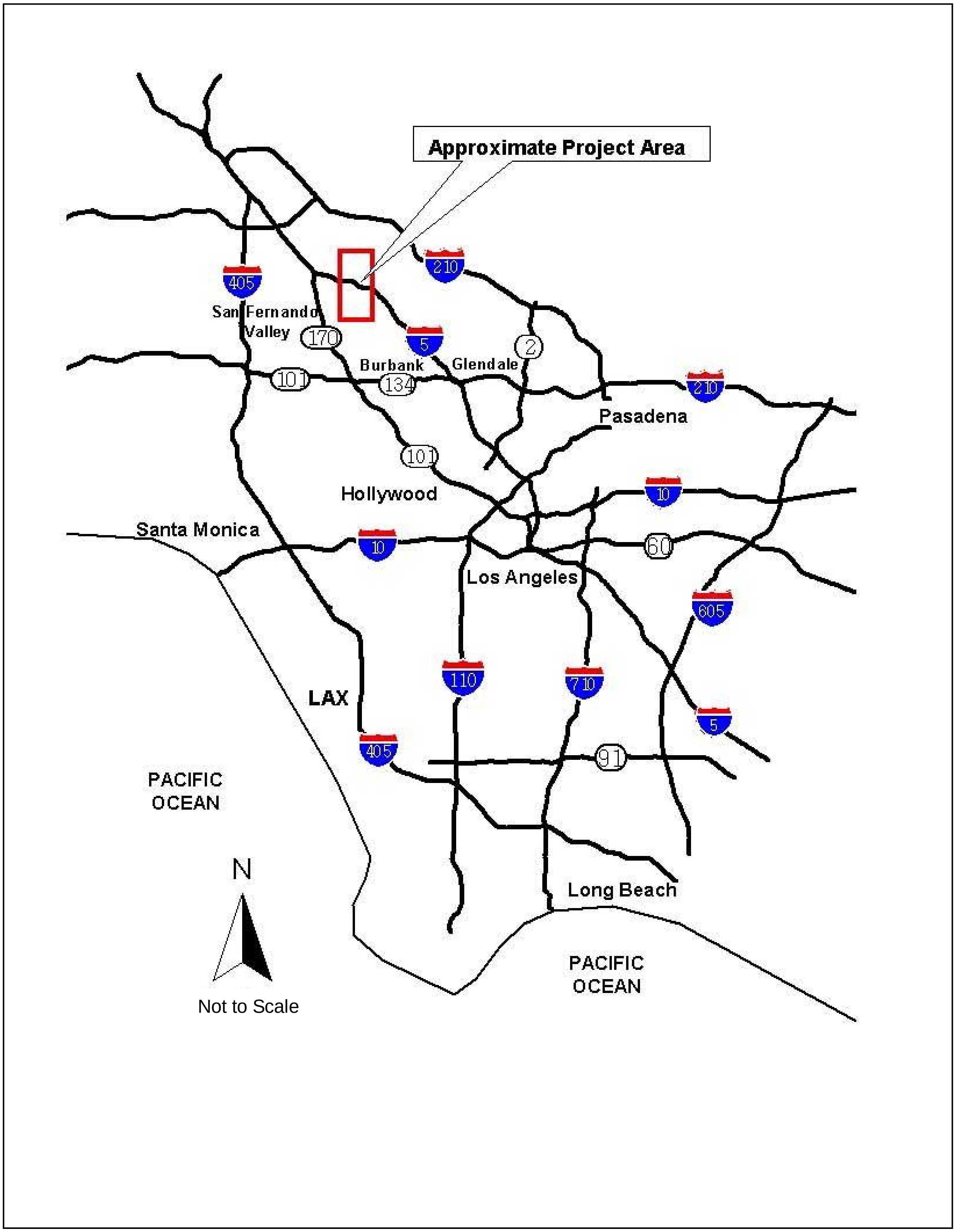
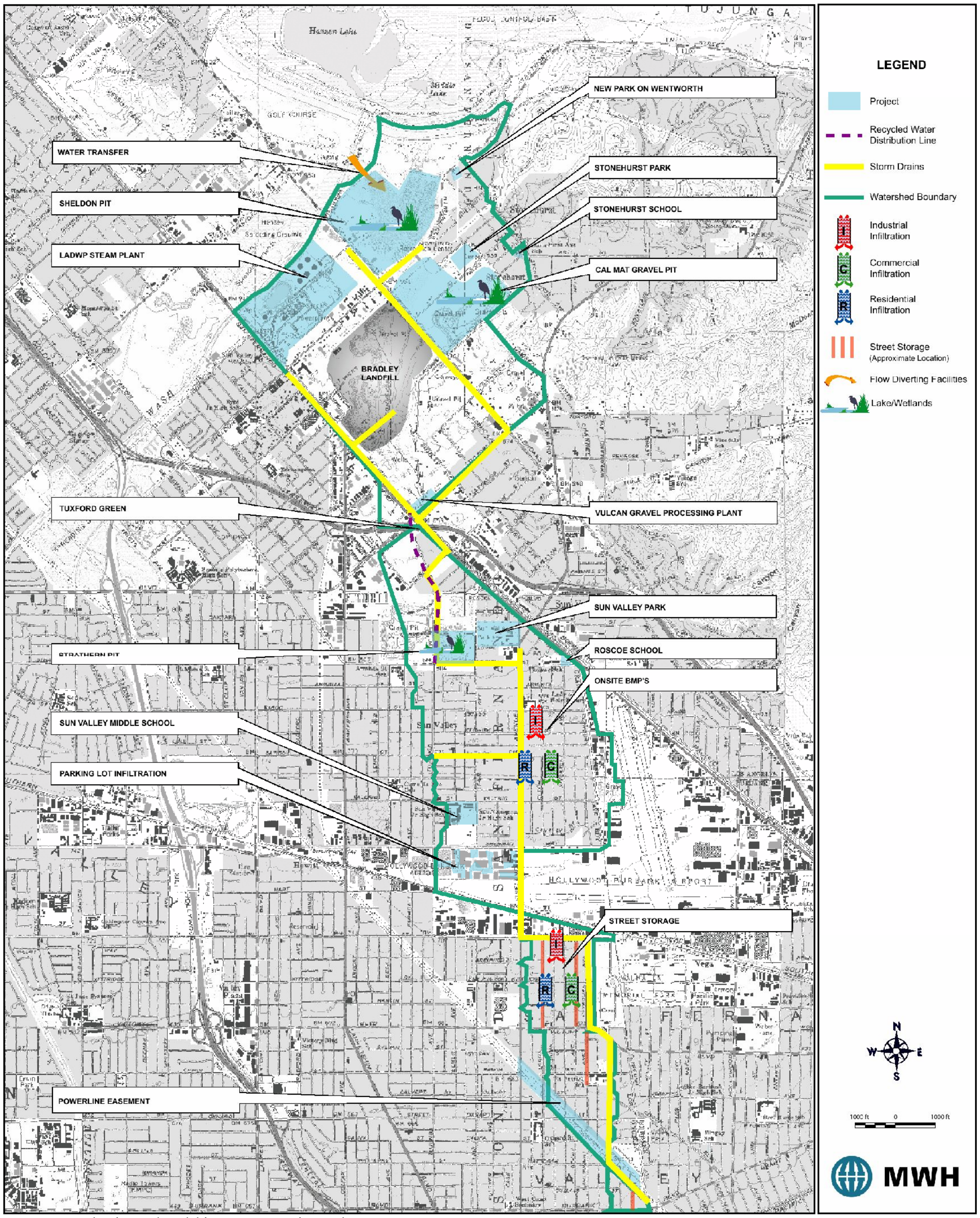


Figure 3-2
Watershed Boundaries and Locations of All Potential Plan Components



Note: Tree Planting and Mulching component is not shown.

Figure 3-2
Watershed Boundaries and Locations of All Potential Plan Components

The project area is highly urbanized and includes industrial, commercial, and residential land uses. A small portion in the northeastern end of the watershed is occupied by low-density residential uses. The remaining area in the northern watershed (north of Tuxford-San Fernando intersection) is dominated by industrial uses, including exhausted gravel pits (Cal Mat Pit and Sheldon Pit), a municipal landfill (Bradley Landfill), a power generating facility (Valley Steam Plant), Vulcan Gravel Processing Plant, and numerous auto dismantling operations. The southern portion of the watershed is primarily developed with low to medium density residential uses. Some industrial uses, including an inert landfill (Strathern Pit), are located north of Strathern Street as well as near Burbank-Glendale-Pasadena Airport.

3.4 DESCRIPTION OF PLAN COMPONENTS

3.4.1 Cal Mat Pit

3.4.1.1 Existing Setting

Cal Mat Pit occupies a 90-acre site bounded by Glenoaks Boulevard on the southwest, Wentworth Street on the northwest, Peoria Street on the southeast, and Dronfield Avenue on the northeast (**Figure 3-3**). Cal Mat Pit was an active gravel pit until the late 1980's. Since then it has been used as a landfill for inert construction debris including concrete, asphalt, rock, dirt and brick. Vulcan Materials Company owns and operates Cal Mat Pit under City of Los Angeles Environmental Affairs Department solid waste facilities permit (Number 19-AR-1160). As required by the California Surface Mining and Reclamation Act (SMARA), a reclamation plan for Cal Mat Pit (Conrock and California Portland Cement, 1977) has been approved by and is on file at the City of Los Angeles Department of City Planning (see **Section 6.5.2** for additional information).

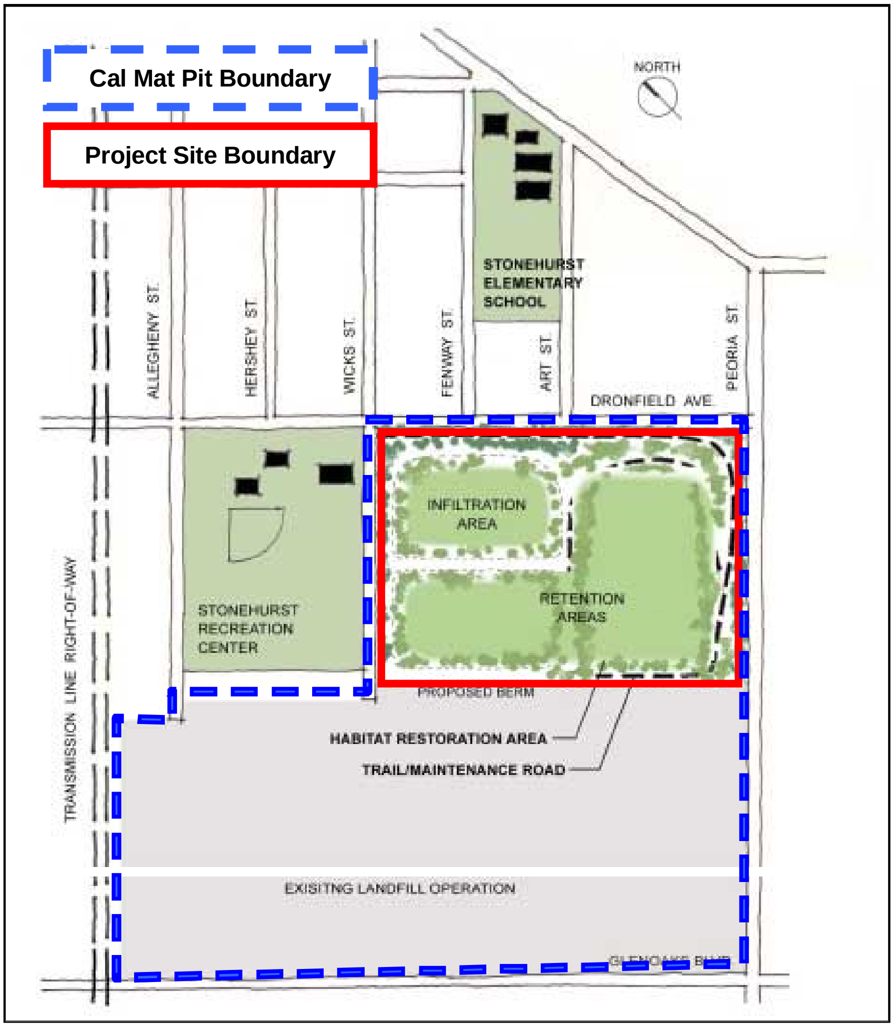
The project proposes to use the approximately 30-acre area on the northeastern corner of the site, which was previously used as a disposal site for gravel wash water. This area is separated by a berm from the active landfill operations in the southern portion of the pit, and is currently not used for landfilling or other operations. The area is vegetated year-round and water ponds in this area during the rainy season. According to conversations with the management staff of Vulcan Materials Company, a small portion of the 30-acre area (the southern corner of Wicks Street and Dronfield Avenue) was not used for gravel excavation, landfilling, or wash water deposition, and may contain natural soils.

Surrounding land uses to the northeast include single-family residential and residential with equestrian uses. Stonehurst Recreation Center is adjacent to the site, located between Allegheny Street and Wicks Street. Stonehurst Elementary School is located one block to the northeast. Sheldon Pit is located to the northwest, across Wentworth Street. Bradley Landfill is located to the southwest across Glenoaks Boulevard.

3.4.1.2 Objective of Project Component

The primary objective of this project component is to capture and infiltrate at Cal Mat Pit stormwater collected from surrounding residential areas, which would alleviate flooding in the northern watershed and increase groundwater recharge. In addition, the project would provide up to 30 acres of green space, including park land and wildlife habitat, for the community.

Figure 3-3
Cal Mat Pit Plan View during Phase 1



3.4.1.3 Description of Project Component

The 30-acre area on the northeastern portion of Cal Mat Pit (project site) would be used as a surface stormwater retention area. The project would be implemented in three phases: Phase 1, Interim Phase, and Phase 2.

During **Phase 1,** the project site would be converted into a stormwater retention area, consisting of a 15-acre detention basin and a 5-acre infiltration basin. Berms (approximately 15 feet high) would be constructed to separate the proposed retention area from the existing landfill area to the south and to separate the two proposed basins. A stormwater inlet, catch basins, and an underground pipeline would be installed in the surrounding streets to collect and convey stormwater into the retention area. The retention area would temporarily store then infiltrate the stormwater.

The area around the basins would be landscaped with low maintenance and drought tolerant vegetation. Public access to the site is not proposed during Phase 1. An irrigation system would be installed to use a portion of the collected stormwater to irrigate the proposed landscaped areas.

Operation of the Phase 1 retention area is expected to continue for 3 years. Operation and maintenance activities would include maintenance of landscaped areas and irrigation system, sediment removal from the retention area, oil/water/sediment separation system cleaning, catch basin and drain cleaning, and total system inspection.

During the **Interim Phase**, the project site would be operated as a landfill for inert construction debris, accepting materials similar to those used in the ongoing landfilling operation in the southern portion of the pit. The project site would continue to serve as a flood control facility, collecting and infiltrating stormwater through standpipes (vertical pipes) that would be inserted into the landfill material. The berms constructed in Phase 1 and the standpipes would be raised gradually to allow for stormwater storage above the landfill's surface. Since inert construction debris may contain materials that could have a detrimental effect on groundwater quality (e.g., lead-based paint and asbestos), the facility will be designed so that stormwater will not come in contact with the landfill material (i.e., standpipes will not be perforated within the layer of landfill materials; landfill materials will be separated from soils by impervious layers such as clay or geotextile membrane).

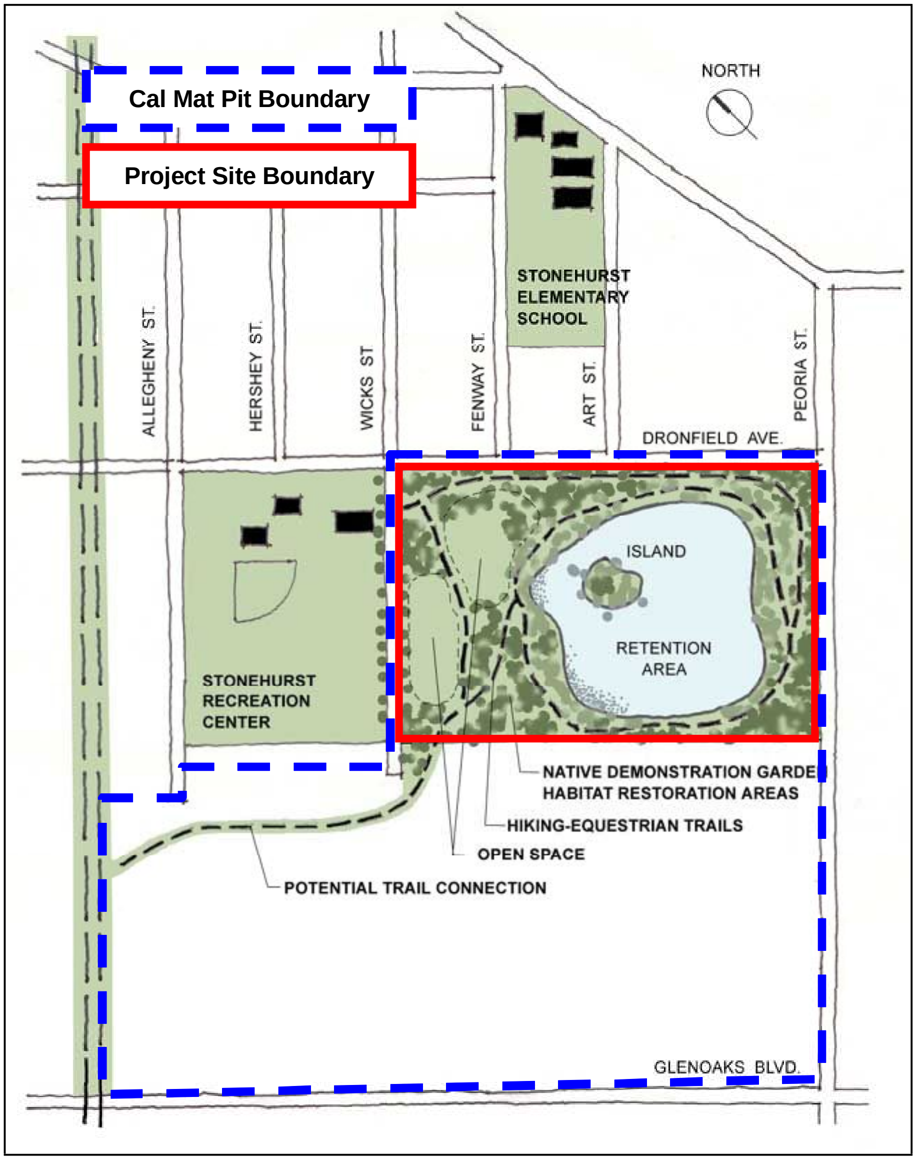
Landfilling operations and concurrent raising of the berms and addition of standpipe sections would continue until the bottom of the retention area is filled to approximately 30 feet below street level. The interim phase is expected to last for approximately 5 years.

In **Phase 2,** landfilling of the site would be discontinued, and the project site would be converted into a 30-acre public park with a lake and an island (**Figure 3-4**). Catch basins, a storm drain inlet, and underground pipelines would be installed in the surrounding streets to convey additional stormwater from the surrounding areas into the retention area. A portion of the project site would be lined with clay so that the stormwater entering the area would pond and create a permanent lake. The lake would provide stormwater storage both above the lake's normal surface and below the lake through the standpipes.

Recreational facilities proposed for the park are trails (approximately 2,800 linear feet), open areas for picnicking and sports, and non-motorized boating and other water sports. Improvements to the new park area would include landscaping, tree planting, and native plant garden to provide recreation, wildlife habitat, environmental education, and aesthetic values. Part of the collected stormwater would be used to irrigate the proposed plantings. The new park area may be connected to the adjacent Stonehurst Recreation Center and Park. Operation and maintenance responsibilities of the park facilities would be transferred to the Los Angeles City Department of Recreation and Parks during/after Phase 2.

Operation and maintenance requirements for Phase 2 flood control facilities are maintenance of landscaped areas and the irrigation system, mosquito control measures, operation and maintenance of the lake, sediment removal from the lake, oil/water/sediment separation system cleaning, catch basin and drain cleaning, and total system inspection.

Figure 3-4
Cal Mat Pit Plan View during Phase 2



3.4.2 New Park on Wentworth Street

3.4.2.1 Existing Setting

This project would be developed on a privately owned, undeveloped parcel located on the northwestern corner of the area bounded by Wentworth Street, Wealtha Avenue, Sheldon Street, and Stonehurst Avenue. The site is approximately 3 acres in area. The vacant parcel is partially fenced on the perimeter, and has scattered vegetation throughout (**Figure 3-5**). Surrounding land uses to the east are residential with some horse keeping. The Hansen Dam Golf Course and Sheldon Pit are located to the west across Wentworth Street.

3.4.2.2 Objective of Project Component

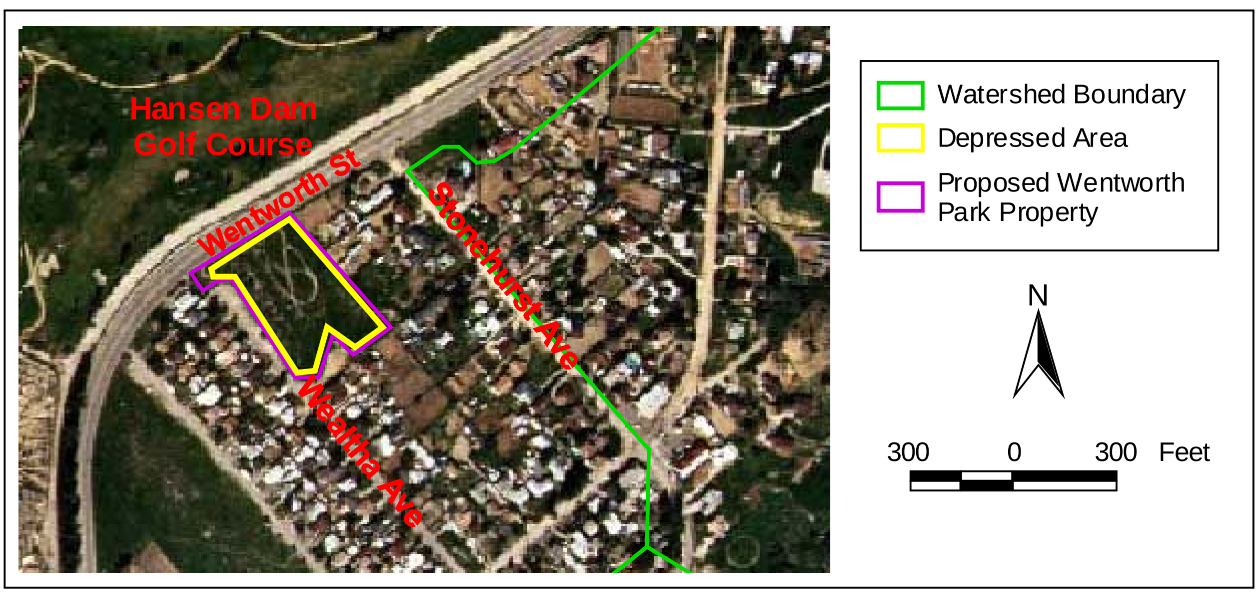
The primary objective of the project component is to capture and infiltrate stormwater collected from residential and open space areas surrounding the site. This would alleviate flooding in the northern watershed and increase groundwater recharge. It would also provide up to 3 acres of additional park land for the community.

3.4.2.3 Description of Project Component

The project proposes to convert the vacant parcel into a new park with various recreational facilities. Approximately 80 percent (2.4 acres) of the project site would be excavated to create a shallow depression, with an average depth of 2 feet. The depressed area would be surfaced with grass or other vegetation and used as a field under normal conditions. During storms, the field would be used to collect and infiltrate stormwater. In a 50-year storm, the depressed area would fill with water, but is expected to be dry within two days. Catch basins and pipelines would be installed in the surrounding streets to convey stormwater from the surrounding areas into the new park.

The park could be landscaped with native plants to provide habitat for terrestrial species, which may provide habitat linkages to the nearby Hansen Dam Golf Course and Hansen Lake. No riparian habitat will be provided since water is expected to infiltrate in less than two days. Maintenance would include removal of sediment and debris from the infiltration area and regular park maintenance, in coordination with the City of Los Angeles Department of Recreation and Parks.

Figure 3-5
New Park on Wentworth Location



3.4.3 Onsite Best Management Practices

3.4.3.1 Existing Setting

The Onsite Best Management Practices (BMPs) component is proposed as a voluntary community involvement program. Although the locations of the component cannot be specifically determined at this time, project sites for Onsite BMPs would consist of yards and other open areas at existing homes and businesses.

3.4.3.2 Objective of Project Component

The objective of the project component is to provide flood control and water conservation benefits by capturing and infiltrating stormwater on a small-scale, localized basis. This component is also intended to promote community involvement and public outreach in watershed management.

3.4.3.3 Description of Project Component

Stormwater Best Management Practices (BMPs) refer to stormwater runoff management methods that are designed to promote onsite storage and infiltration and/or to reduce pollutants in runoff. Many BMPs can be implemented on a small scale, including at the level of individual residential, commercial, and industrial properties. The Watershed Management Plan proposes to involve the community in implementing such small-scale stormwater BMPs within Sun Valley Watershed. Onsite BMPs proposed by the Watershed Management Plan include retention grading and/or installation of cisterns, drywells, or infiltrators at participating residential, commercial, and industrial properties.

Cisterns are storage tanks that retain runoff for later reuse by the property owner (**Figure 3-6**). Runoff enters through a settling chamber where a portion of suspended solids is removed as water spills over into the storage tank. Above-ground cisterns can be drained by gravity through a small outlet at the bottom of the tank and the water can be used for non-potable uses such as irrigation. Underground cisterns require pumping to transport the runoff from the tank to the ground surface for reuse.

Drywells are excavated pits (app. 2 feet in diameter) lined with gravel or other porous materials inside to infiltrate stormwater. The drywells will be designed to ensure that the bottom of the drywell is at least 20 feet above the last 30-year high groundwater level. Runoff flows through a settling chamber where a portion of suspended solids is removed before the water enters the drywell. Drywells are proposed for use on residential and commercial properties. An example of drywells installed in a parking lot planter is shown in **Figure 3-7**.

Infiltrators are installed below the surface on a site to create a zone of increased infiltration. Typical dimensions for these devices are 1.3 feet in height, 2.8 feet in width, and a length of 6.3 feet. Stormwater storage is available within the infiltrator chambers as well as the underlying supportive gravel network. Runoff is collected in a settling chamber where a portion of suspended solids is removed before water enters the infiltration zone. Infiltrators are proposed for use on residential and commercial properties. An example of an infiltrator system is shown in **Figure 3-15.**

Retention grading creates a bermed area on a parcel to retain and infiltrate stormwater. Typical dimensions for berming are estimated at 30 feet by 25 feet with an average depth of two feet, creating an average storage volume of 1,500 cubic feet (11,221 gallons).

Figure 3-6
Typical Residential Cistern (above-ground)

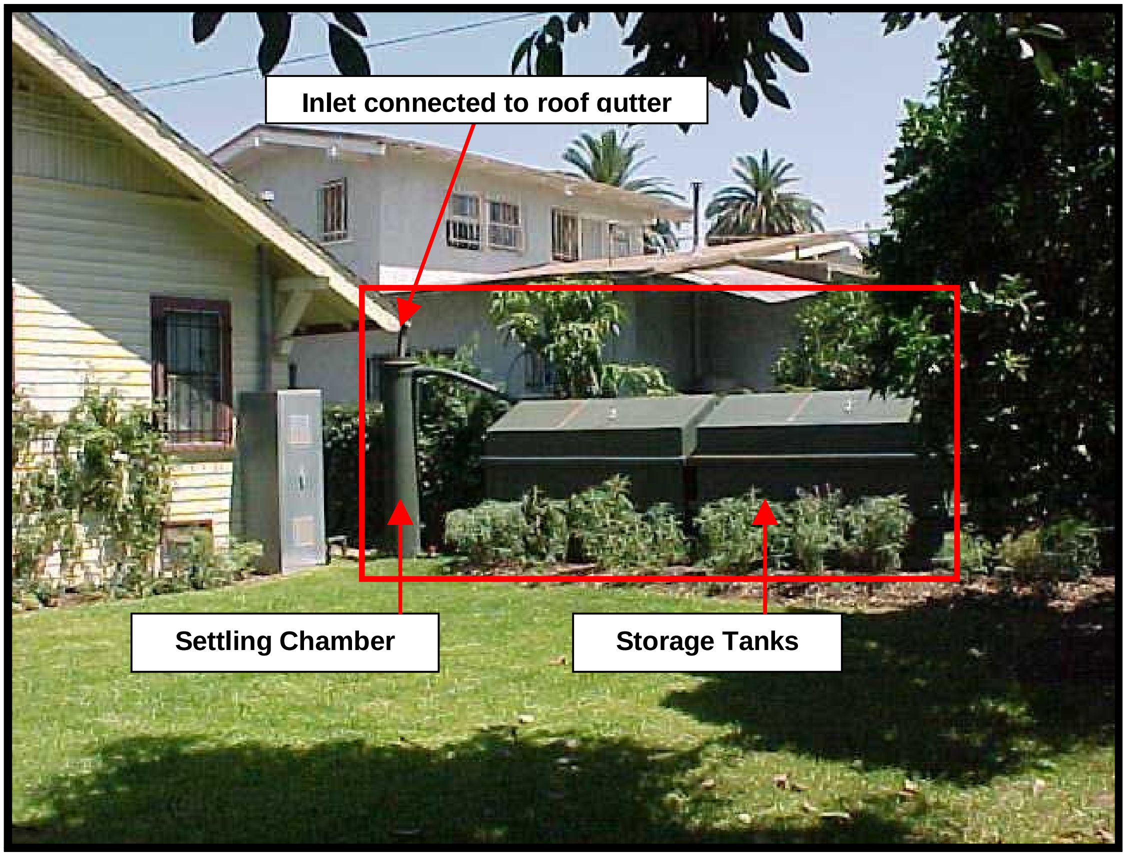
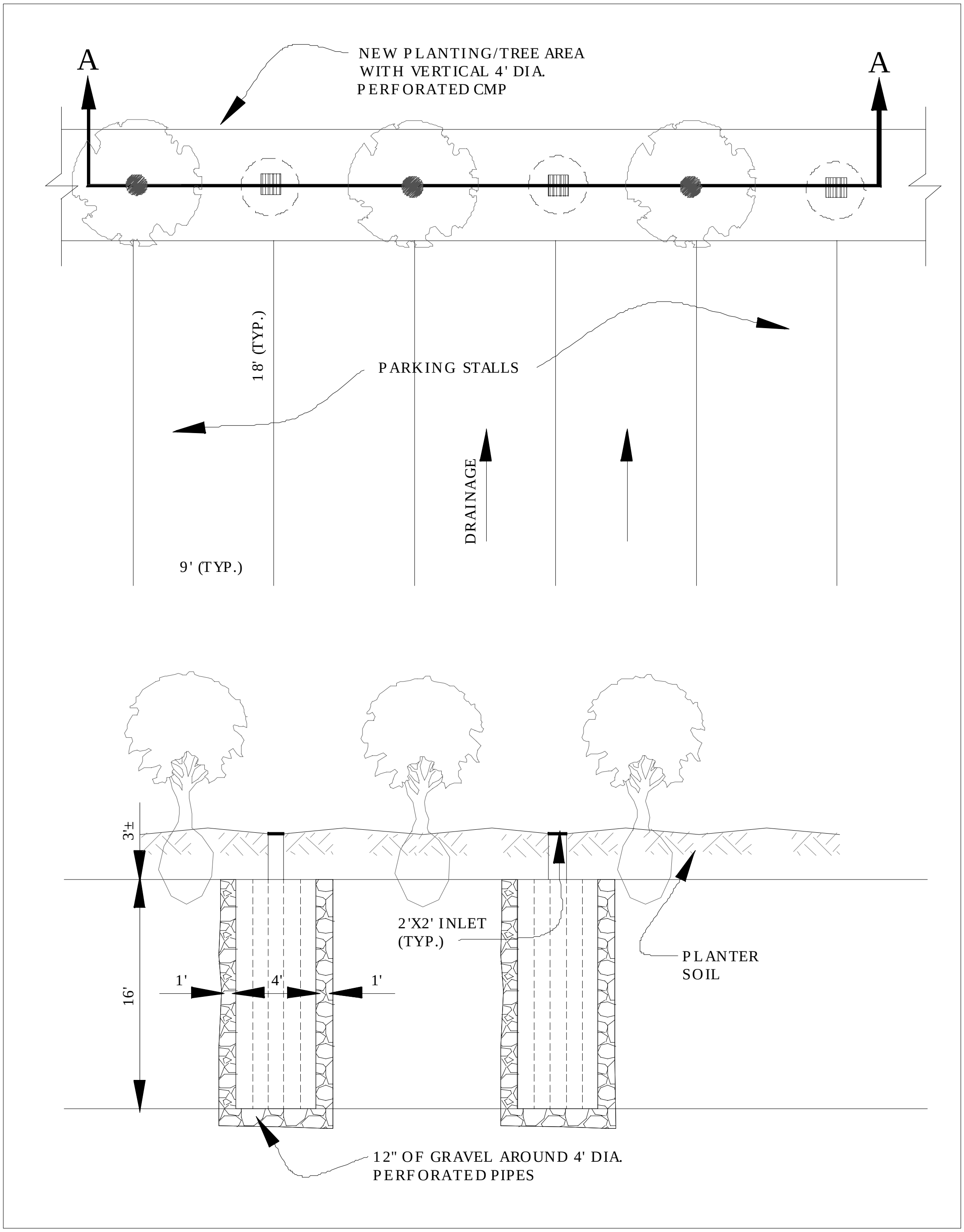


Figure 3-7
Example of Drywells Installed in a Parking Lot Planter



Typical installation of onsite BMPs anticipated at each participating parcel is described below in **Table 3-1**.

Table 3-1
Typical Onsite BMP Installation per Participating Parcel

Parcel Land Use (average parcel size)	Onsite BMPs	Size of Typical BPM Unit (width x length x height in feet)	Number of units per parcel
Residential (0.17 acre) *(Install one of the three BMPs listed)*	Cisterns	9' x 20' x 5'	2
	Drywells	2' (diameter) x 80' (depth)	4
	Infiltrators	6' x 3' x 1.3'	1
Commercial (0.33 acre) *(Install one of the three BMPs listed)*	Cisterns	13' x 20' x 10'	2
	Drywells	2' (diameter) x 80' (depth)	4
	Infiltrators	6' x 3' x 1.3'	1
Industrial (1 acre)	Cisterns	25' x 40' x 10'	1

Participation in the use of onsite BMPs would be voluntary; therefore, locations of onsite BMPs cannot be determined at this time. Expected participation rates range between 20 and 40 percent of the properties within the watershed as noted in **Table 3-2**.

Table 3-2
Number of Properties Expected to Participate in Onsite BMPs

Participation Rate Goal*	Applicable Alternative**	Approximate Number of Participating Properties			
		Single Family	Multi-Family	Commercial	Industrial
20 %	Alternatives 2 and 4	1,700	550	130	140
40 %	Alternatives 1 and 3	3,400	1,200	260	280

* Percentage of total properties within watershed participating in Onsite BMPs.
** See Section 3.5.

3.4.4 Parking Lot on Sherman Way

3.4.4.1 Existing Setting

This component uses the commercial/industrial compound located on Sherman Way. The property is bounded by Sherman Way to the north, Vineland Avenue to the east, Tujunga Avenue to the west, and a Burbank Airport property to the south (**Figure 3-8**). The property is privately owned and consists of various commercial and industrial buildings with parking spaces located around the buildings.

Surrounding land uses include Burbank Airport to the east across Vineland Avenue, Sun Valley Middle School and residential uses to the north across Sherman Way, commercial/industrial uses to the west, and the Burbank Airport property to the south. The airport property contains various equipment and facilities used for airport communication and navigation.

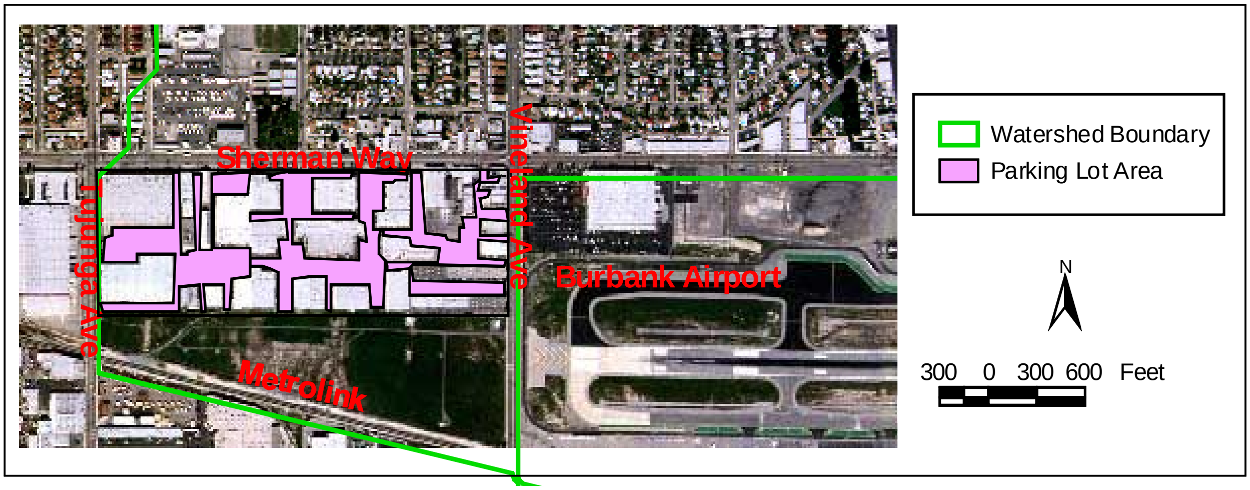
3.4.4.2 Objective of Project Component

The primary objective of the proposed project is to capture and infiltrate stormwater from the project site and surrounding areas, which would alleviate flooding in the southern watershed and increase groundwater recharge.

3.4.4.3 Description of Project Component

This project would involve installation of subsurface stormwater infiltration devices (**Figure 3-15**) beneath the existing parking areas (total of 18 acres) around the commercial buildings. The pavement would be removed for construction but would be restored after installation of the tanks, and no change in the number of parking spaces is proposed. Trees may be planted between the stalls. Catch basins would be installed in the surrounding streets to collect and convey stormwater to the proposed tanks.

Figure 3-8
Parking Lot on Sherman Way Infiltration Location



3.4.5 Power Line Easement

3.4.5.1 Existing Setting

A City of Los Angeles Department of Water and Power (LADWP) power line easement passes through the southern end of the watershed along Whitnall Highway. The easement width is approximately 300 feet, and the spacing between the power line towers is approximately 700 to 850 feet. The easement within the Sun Valley watershed boundary is approximately 0.7 miles long. This easement extends beyond the watershed boundary into other portions of the City of Los Angeles to the west and the City of Burbank to the east. Surrounding land use along the power line is primarily residential.

3.4.5.2 Objective of Project Component

The primary objective of the project component is to capture and infiltrate stormwater collected from the residential areas surrounding the project site. This would alleviate flooding in the southernmost portion of the watershed and increase groundwater recharge. The project component is also intended to provide additional green space, including park land and wildlife habitat, for the community.

3.4.5.3 Description of Project Component

A series of sedimentation and infiltration basins would be constructed in the power line easement to capture, treat, and infiltrate runoff. Sedimentation basins can be located at the intersections of streets running north and south, such as Cahuenga Boulevard. These sedimentation basins would provide pretreatment by settling out debris such as trash, suspended solids, and pollutants associated with solids such as heavy metals, prior to infiltration. The first flush of each storm would be captured in the sedimentation basins where debris can settle for at least 30 minutes. After sedimentation, runoff water would spill over from the sedimentation basins to the infiltration basins, which are proposed as open depressed areas within the power line easement. **Figure 3-9** depicts the conceptual design of the power line easement based on Alternative 2 sizes. **Figure 3-10** depicts a possible configuration of the power line easement in Sun Valley based on Alternative 2 sizes.

Figure 3-9
Conceptual Design of the Power Line Easement

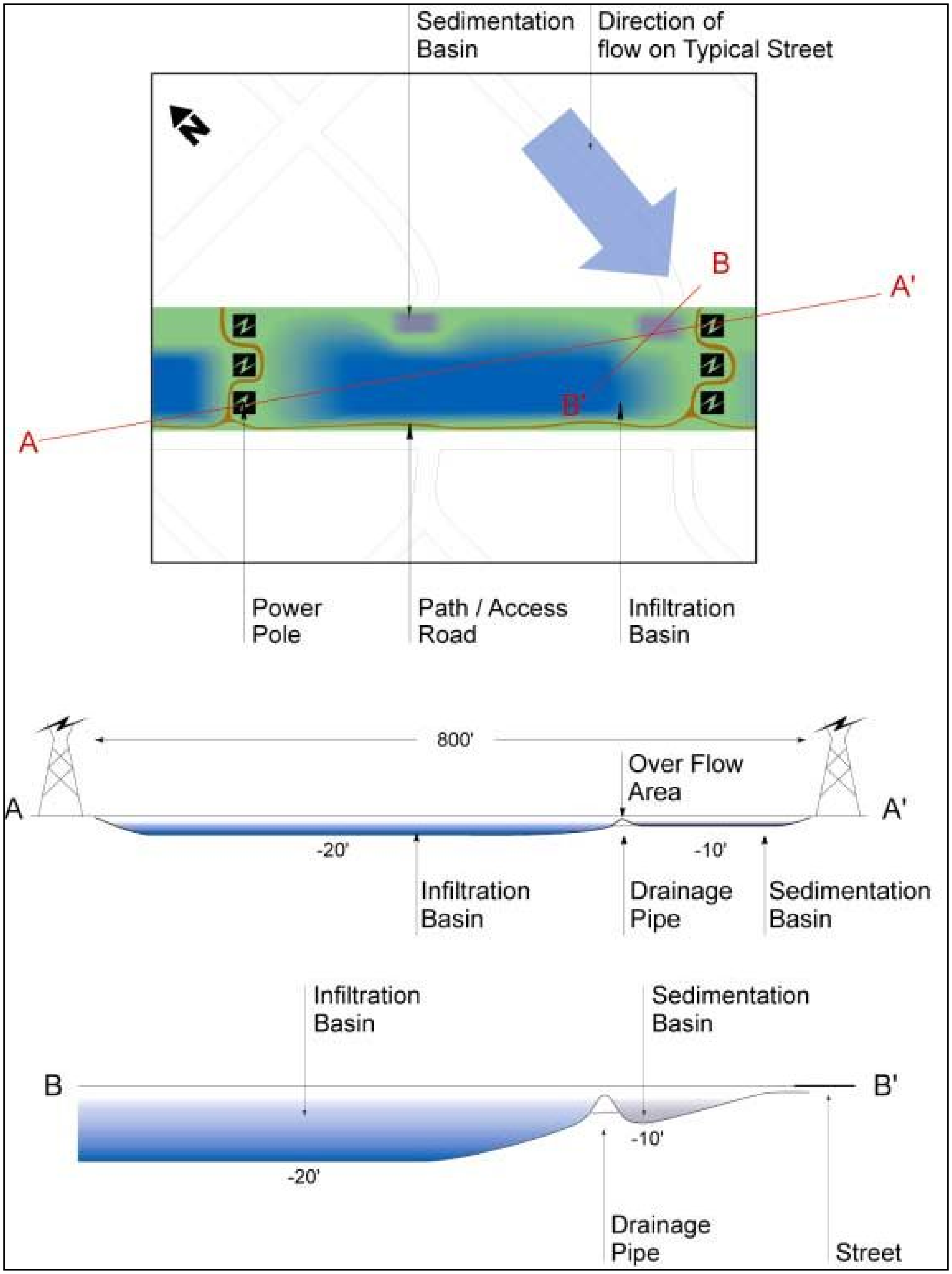
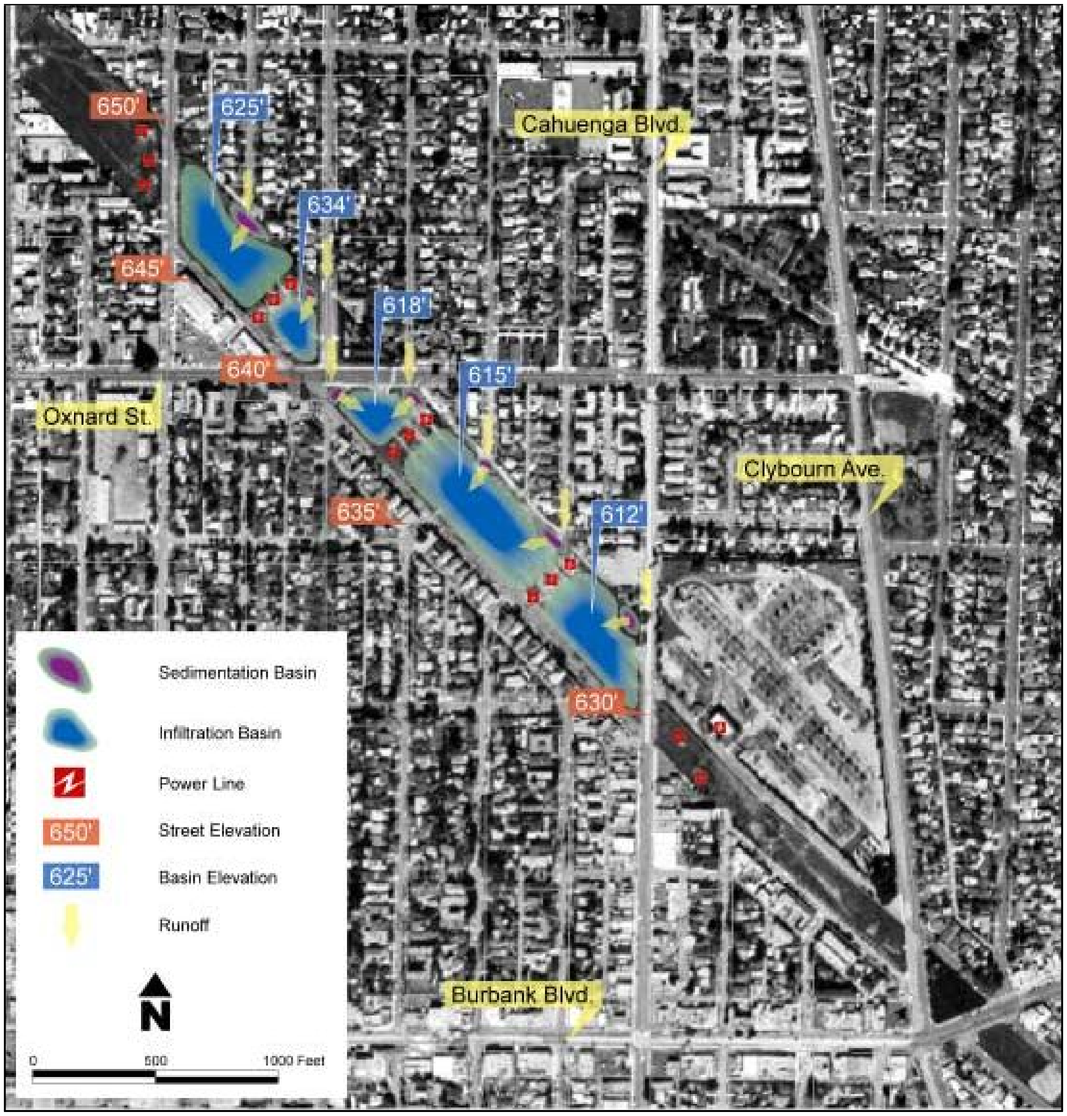


Figure 3-10
Possible Configuration of Powerline Easement



Swales or catch basins and pipes could direct runoff from the streets to the sedimentation basins. Required facility sizes for each alternative are shown in **Table 3-3**. Each sedimentation basin is approximately 1,500 square feet in area and up to 10 feet in depth. The infiltration basins would take up most of the free space between the towers and surrounding the access road. The infiltration basins would have a maximum depth of 20 feet with side slopes of 4:1 (as shown in **Figure 3-9**). The approximate area required for infiltration in each alternative is shown in **Table 3-3**.

Table 3-3
Power Line Easement Facility Sizes for Each Alternative

Alternative	Sedimentation Basins	Infiltration Basins	Total Length (miles)
1	4 basins, 39' x 39' Average depth 6'	16 acres 7 power line segments	1.1
2	2 basins, 34' x 34' Average depth 6'	6 acres 3 power line segments	0.5
3	4 basins, 37' x 37' Average depth 6'	14 acres 6 power line segments	0.9
4	4 basins, 40' x 40' Average depth 6'	12 acres 5 power line segments	0.8

The sedimentation/infiltration areas could be landscaped and used for passive recreation, such as community gardens, picnic areas, or other open space uses, and as habitat for local terrestrial and bird species. Eventually, this could be part of a habitat linkage to the Hansen Dam area along the power line corridor.

Maintenance would include routine sediment and trash removal from the basins. In addition, routine inspection would be required to ensure that saturation of soils from stormwater storage and infiltration does not affect the stability of the power line towers. It may be necessary to install dry wells to infiltrate water far below the ground surface.

3.4.6 Roscoe Elementary School

3.4.6.1 Existing Setting

Roscoe Elementary School is located on Strathern Street, and is bounded by San Fernando Road and White Street. It is within District B of the LAUSD system, and serves approximately 1,200 students from grades K through 5. The Metrolink railroad is located along San Fernando Road to the northeast of the school property. Surrounding land uses include medium- and low-density residential and commercial properties (**Figure 3-11**).

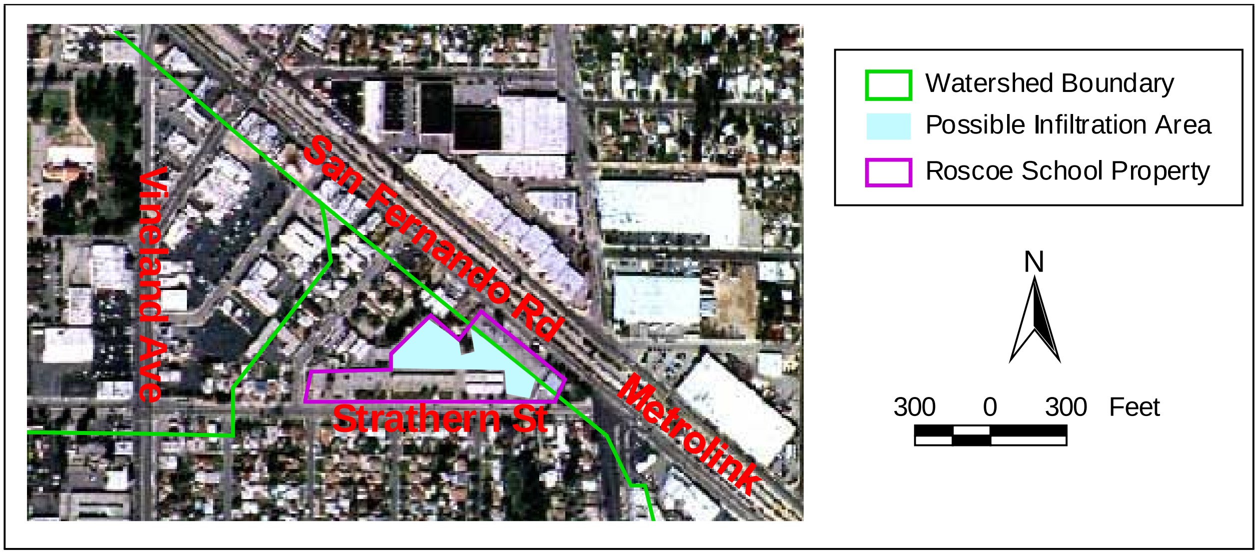
3.4.6.2 Objective of Project Component

The primary objective of the project component is to capture and infiltrate stormwater collected from residential areas surrounding the site. This would alleviate flooding in the southern watershed and increase groundwater recharge.

3.4.6.3 Description of Project Component

The proposed project would install underground tanks for stormwater storage and infiltration beneath the school's playground, parking lot, and other open space areas. Approximately 2.5 acres of open areas are available within the school site. The project would install subsurface stormwater infiltration devices in approximately 60 percent of the open areas. Existing pavement or grass surfaces would be removed for construction, but all surfaces would be restored to the original condition or improved with landscaping once the tanks have been installed.

Figure 3-11
Roscoe School Proposed Infiltration Area



3.4.7 Sheldon Pit and Tujunga Wash Diversion

3.4.7.1 Existing Setting

Sheldon Pit is an exhausted gravel pit owned by Vulcan Materials Company. Located at the north end of the watershed, the pit is bounded by Wentworth Street to the east, Glenoaks Boulevard to the southwest, Tujunga Wash to the northwest, and Hansen Dam Golf Course to the north. Hansen Spreading Grounds is located to the west across Tujunga Wash. The spreading grounds is currently used by LACDPW to recharge the groundwater basin using some of the flows from Tujunga Wash.

The surface area of the site is approximately 138 acres, and the maximum pit depth is about 160 feet. The southern portion of the pit has been excavated to a level where groundwater is exposed most of the time. Sheldon Pit is used as a source of and disposal location for gravel wash water for the Vulcan Gravel Processing Plant. Exposed groundwater is pumped out of Sheldon Pit and used for gravel wash operations at the Vulcan Gravel Processing Plant. The resulting wash water, which contains silts and other fine materials, is pumped back to Sheldon Pit for disposal. As required by SMARA, a reclamation plan for Sheldon Pit (Cal Mat Company, 1990) has been approved by and is on file at the City of Los Angeles Department of City Planning (see **Section 6.5.2** for additional information).

3.4.7.2 Objective of Project Component

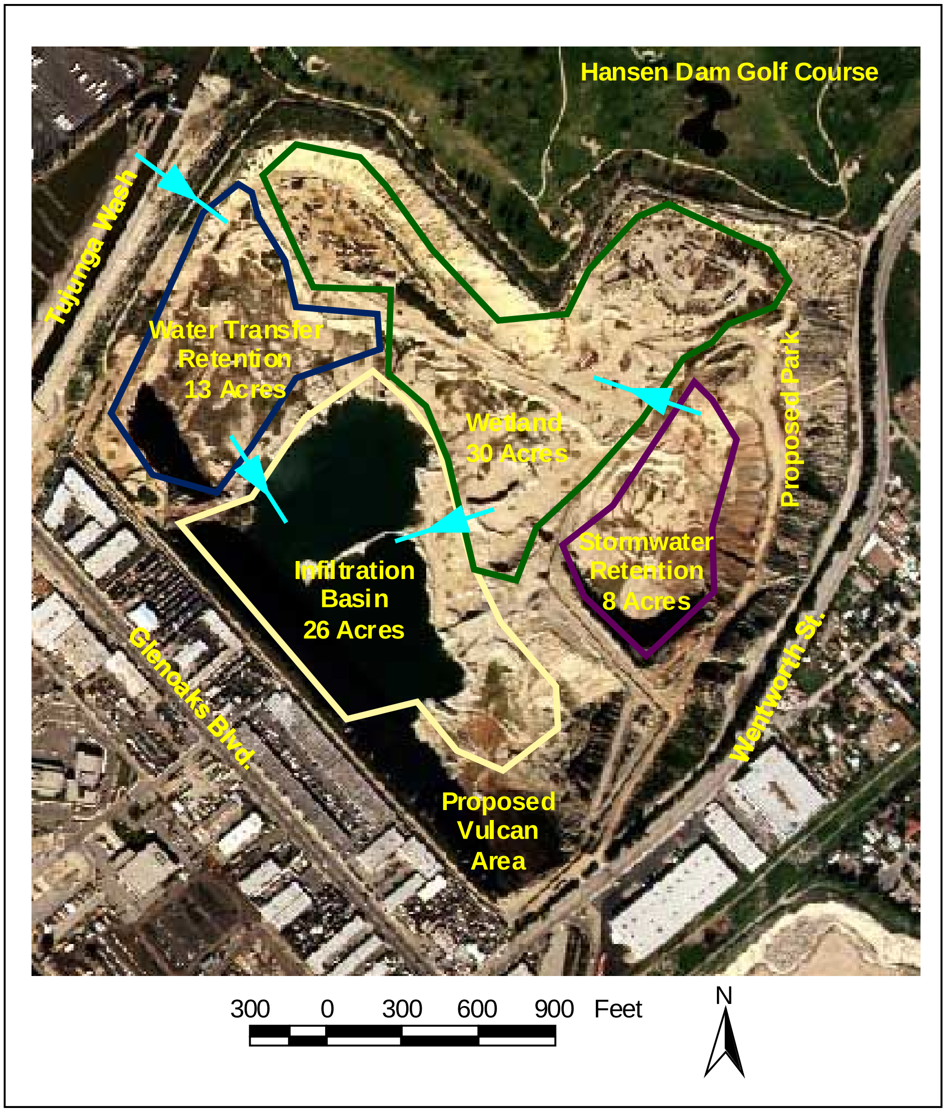
The primary objective of this project component is to capture in the pit and infiltrate stormwater collected from primarily open space areas surrounding the site, which would alleviate flooding in the northern watershed and increase groundwater recharge. In addition, substantial water conservation benefits would be achieved by capturing and infiltrating some of the flows of Tujunga Wash. This project component is also intended to provide up to 138 acres of green space, including park land and wildlife habitat, for the community.

3.4.7.3 Description of Project Component

This project proposes to convert the exhausted gravel pit into a surface stormwater retention and treatment area (**Figure 3-12**). In addition to capturing stormwater from surrounding areas, Sheldon Pit would be used to store and infiltrate some of the flows of Tujunga Wash to augment the groundwater recharge capacity of Hansen Spreading Grounds. Under the proposed project design, Sheldon Pit will be filled (with clean fill soils) to approximately 70 feet below street level, which would be approximately 90 feet above existing groundwater levels at this location. After project implementation, groundwater will not be exposed at Sheldon Pit.

In order to capture and infiltrate stormwater and flows from Tujunga Wash, approximately 100 acres of Sheldon Pit would be modified, e.g., through installation of berms, to create the following areas: Stormwater Retention (8 acres with average depth of 29 feet below street level), Transfer Retention (13 acres with average depth of 43 feet), Treatment Wetland (30 acres), Infiltration Basin (26 acres), berms and access roads, and park/recreation area. (The sizes of the proposed facilities indicated above and in Figure 3-12 present one possible layout.) The remaining area within the site would be available for continued use by Vulcan Materials Company for its existing gravel washwater disposal operations.

Figure 3-12
Sheldon Pit Proposed Facilities

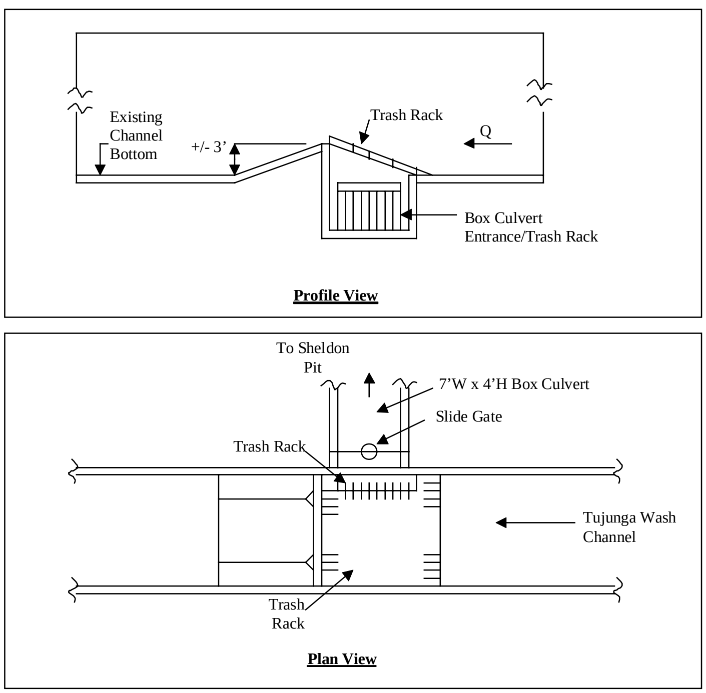


To convey stormwater into the Stormwater Retention area, collector drains would be installed in Glenoaks Boulevard and Sheldon Street. The Stormwater Retention area would be terraced to provide recreational use of the side slopes during dry conditions. The collected stormwater would be transferred from the Stormwater Retention area to the Treatment Wetland area, where some of the pollutants would be removed. The wetland area would be operated as a free water surface (FWS) wetland designed in alignment with EPA guidelines (EPA, 1999b) for stormwater treatment wetlands, and most of its area will be in shallow ponds. The runoff from a 50-year storm would be treated in a period of 57 days. After circulating through the Treatment Wetland, the water would be transferred to the Infiltration Basin portion of the pit. During dry weather conditions, water would be circulated repeatedly through the wetland using a pump to maintain water level, and no water would leave the wetland area.

To divert flows from Tujunga Wash into the Transfer Retention area, a section of the Tujunga Wash's concrete channel bottom would be lowered by approximately 10 feet to capture a portion of the storm flows that bypass the existing diversion to Hansen Spreading Grounds. Captured flows would be diverted into the proposed Transfer Retention area within Sheldon Pit through a 4-feet high by 7-feet wide reinforced concrete box culvert, fitted with a slide gate to control diversions. Additional channel modifications may be necessary upon further hydrologic analysis. Water diverted from Tujunga Wash would be transferred from the Transfer Retention area into the Infiltration Basin area to recharge the groundwater (**Figure 3-13**). In an average year, approximately 6,000 acre-feet of water would be diverted from Tujunga Wash and infiltrated into Sheldon Pit.

The portions of the pit around the proposed retention basins (up to 40 acres) could be used for passive and active recreation. New recreational facilities could be linked with the nearby Hansen Golf Course. The retention areas and the surrounding areas could also be used to provide wetland and terrestrial habitat. It is expected that Vulcan Materials Company will continue to use Sheldon Pit for supply and disposal of gravel wash water.

Figure 3-13
Tujunga Wash Diversion Structure



3.4.8 Stonehurst Elementary School

3.4.8.1 Existing Setting

Stonehurst Elementary School is located on Stonehurst Avenue between Fenway Street and Art Street (**Figure 3-14**). It is located within District B of the LAUSD system and serves approximately 350 students from grades K through 5. The school property includes school buildings, a playground, garden areas, an auditorium, and a parking lot. The school is surrounded by single-family residences. Stonehurst Recreation Center and Park is located a few blocks to the west, and Cal Mat Pit is located a block to the southwest.

3.4.8.2 Objective of Project Component

The primary objective of this project component is to capture and infiltrate stormwater collected from residential and open space areas surrounding the site. This would alleviate flooding in the northern watershed and increase groundwater recharge.

3.4.8.3 Description of Project Component

The proposed project would install underground tanks for stormwater storage and infiltration beneath the school's playground, parking lot, and other open areas. Approximately 3 acres of open area are available within the school site. The project would install subsurface stormwater infiltration devices (**Figure 3-15**) in approximately 60 percent of the open areas. Existing pavement or grass surfaces would be removed for construction, but all surfaces would be restored to the original condition or improved with landscaping once the tanks have been installed.

Figure 3-14
Stonehurst Elementary School Infiltration Area

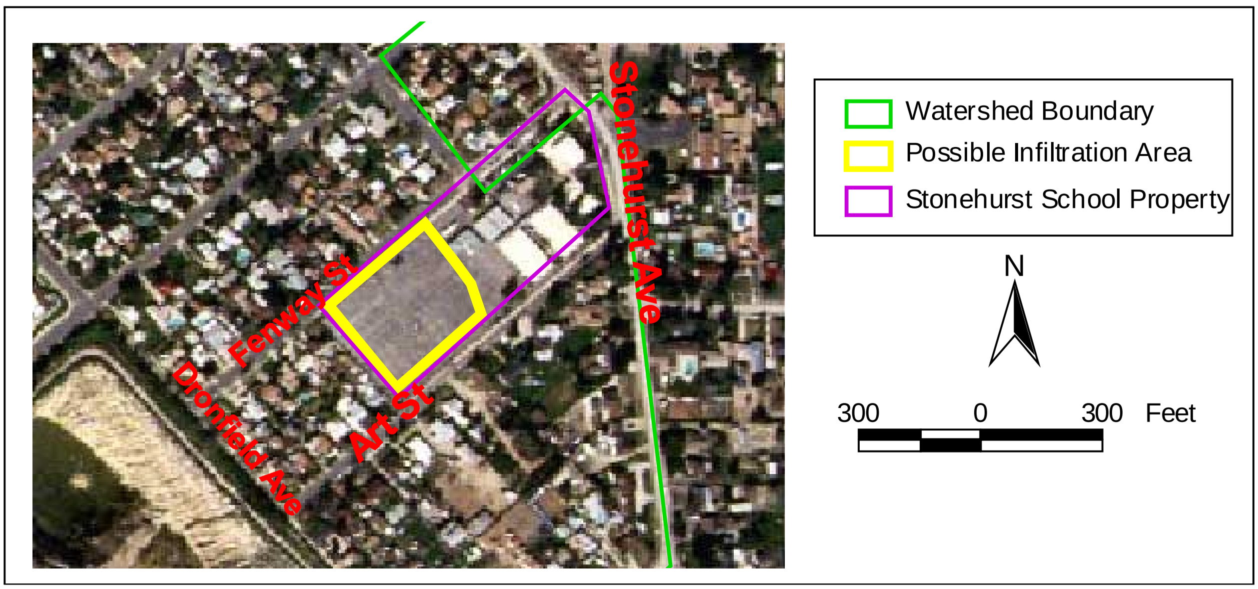


Figure 3-15
Subsurface Infiltration Devices

3.4.9 Stonehurst Park

3.4.9.1 Existing Setting

Stonehurst Recreation Center and Park (Stonehurst Park) is a City of Los Angeles neighborhood park located on Dronfield Avenue between Allegheny Street and Wicks Street. The site area is approximately 13 acres. Facilities include a playground, baseball field, picnic and barbecue area, a recreation center building for indoor activities, and open lawn areas for additional picnicking, pickup soccer, softball, and other large group activities. Surrounding land uses to the northeast and northwest are single-family residential. Wicks Street to the southeast separates the park from Cal Mat Pit (**Figure 3-16**).

3.4.9.2 Objective of Project Component

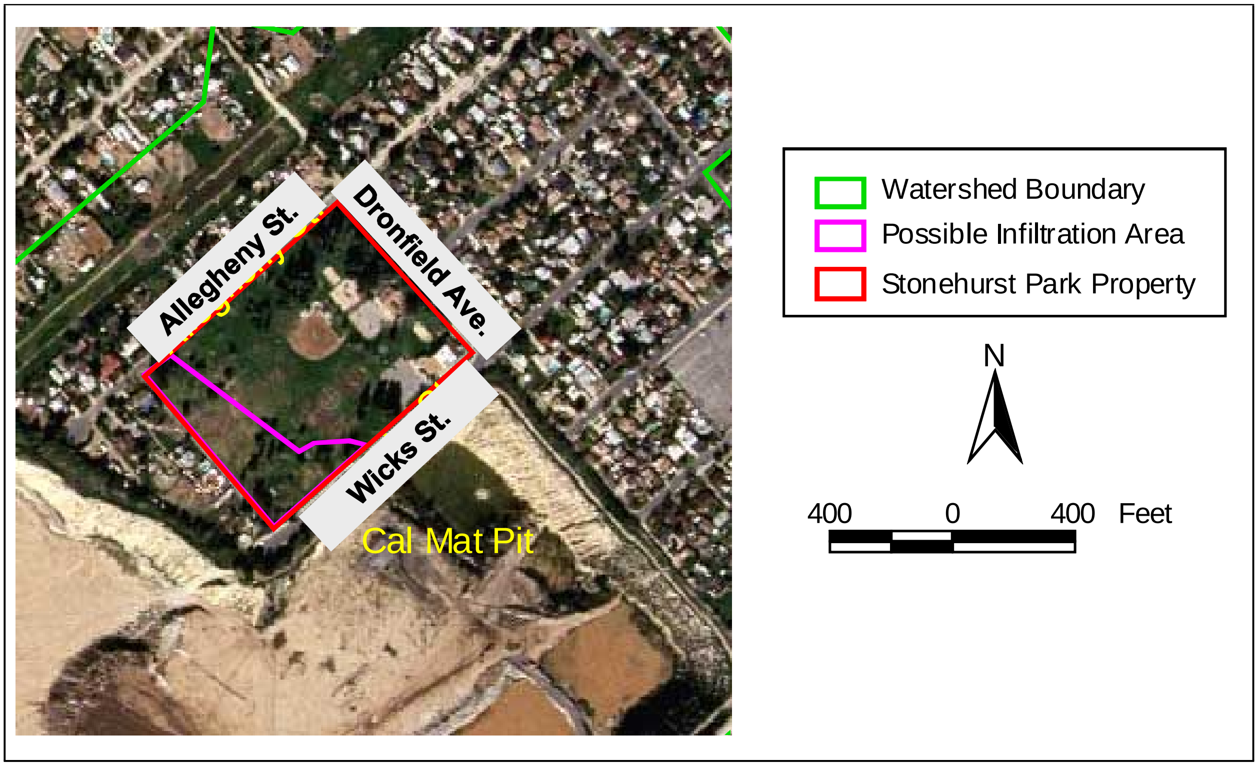
The primary objective of the project component is to capture and infiltrate stormwater collected from residential and open space areas surrounding the site. This would alleviate flooding in the northern watershed and increase groundwater recharge.

3.4.9.3 Description of Project Component

The proposed project would involve modification of the park field area to capture and infiltrate stormwater. Approximately 20 percent of the park area would be excavated to create a shallow depression with an average depth of 2 feet. Once construction is complete, the surface would be restored to its original state. Catch basins and pipelines would be installed in the surrounding streets to direct stormwater from the surrounding residential areas into the field area. During large storms, water would pond in the depressed field area and ultimately infiltrate into the ground. In a 50-year storm, the depressed area would be filled with water, but is expected to be dry within two days.

The park will be landscaped with native plants to provide habitat for terrestrial species, which may provide habitat linkages to the nearby Hansen Lake. Maintenance would include periodic removal of sediment and debris from the infiltration area.

Figure 3-16
Stonehurst Park Proposed Infiltration Area



3.4.10 Storm Drains

3.4.10.1 Existing Setting

The storm drains would be constructed underground within existing roadways in the project area, potentially in the vicinity of existing utility lines for water, sewer, gas, oil, and communications. Depending on the segment, adjacent surface uses would include residential, commercial, and/or industrial uses.

3.4.10.2 Objective of Project Component

The objectives of the storm drains are 1) to collect stormwater and convey it to the various project components while minimizing flooding in the streets, and 2) to supplement the flood control capacities of other project components (retention facilities) in the southern watershed, as needed (Alternatives 2 and 4).

3.4.10.3 Description of Project Component

The project requires installation of storm drains to collect stormwater from the street surfaces and convey it below the streets. All of the alternatives will include storm drains to convey runoff into the proposed stormwater storage/infiltration facilities. [In Alternatives 2 and 4, storm drains will connect to existing drains located at the southern end of the watershed, which ultimately drain to the Los Angeles River].

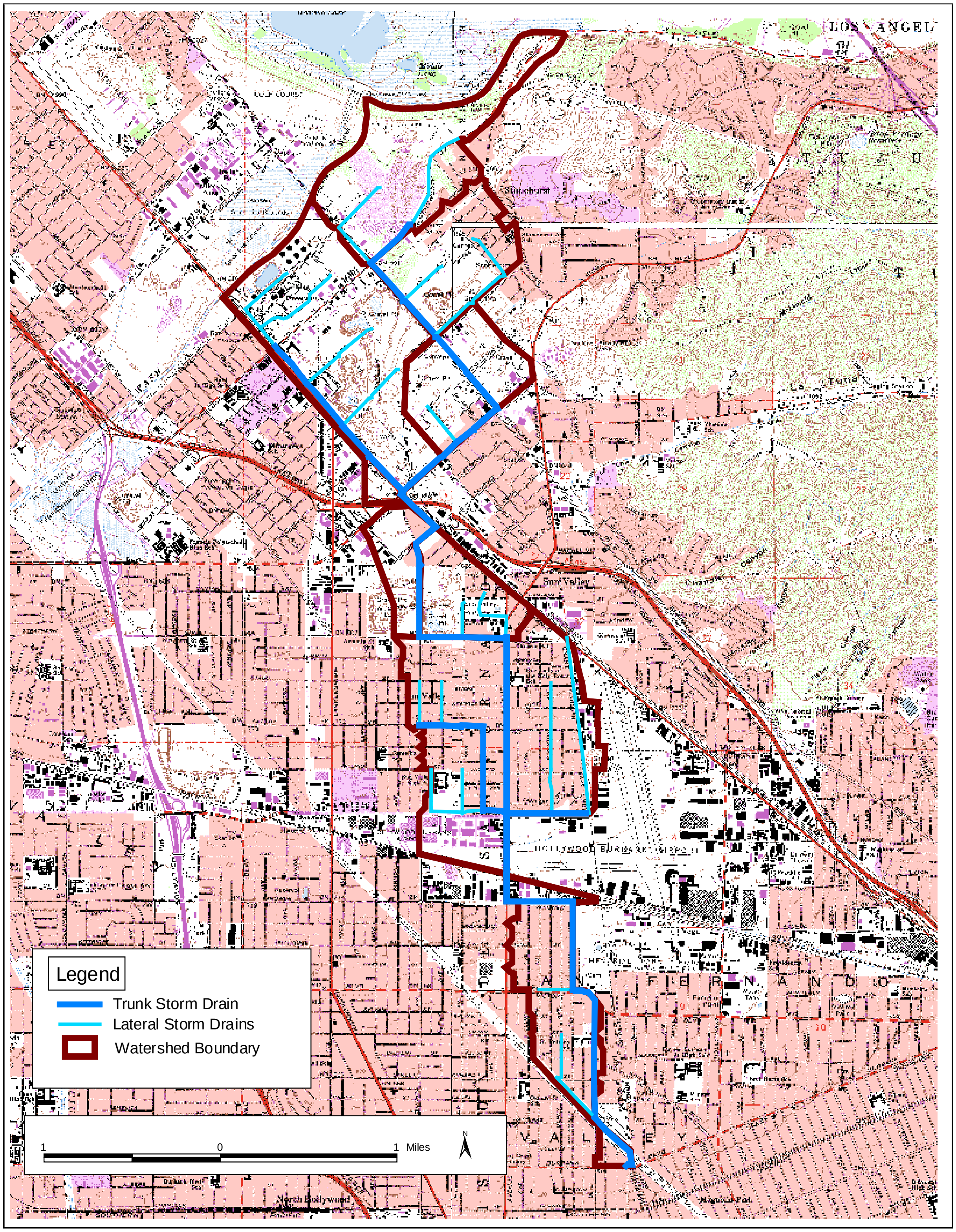
Storm drains will be installed within roadways. Approximate alignments of the storm drains are shown in **Figure 3-17**. All four alternatives are similar in terms of the total length of storm drains required (up to 13.6 miles, see **Table 3-4**). Storm drains will vary in size from less than 3 feet in diameter up to a 10-feet by 10-feet reinforced concrete box (RCB). It is anticipated that LACDPW and the City of Los Angeles will share the responsibility of constructing these storm drains.

Table 3-4
Proposed Storm Drain Sizes and Lengths

Size	Approximate Length			
	Alternative 1	**Alternative 2**	**Alternative 3**	**Alternative 4***
30" – 96" diameter RCP	59,000 feet	55,400 feet	59,900 feet	43,250 feet
5' x 5' – 10' x 10' RCB	12,800 feet	9,100 feet	5,400 feet	13,350 feet
Total	**13.6 miles**	**12.2 miles**	**12.4 miles**	**10.7 miles**

* Based on the length of Project 9250 storm drains as presented in the EIR for the project (LACDPW, 1995).

Figure 3-17
Locations of Proposed Storm Drains



3.4.11 Strathern Pit

3.4.11.1 Existing Setting

Strathern Pit is an exhausted gravel pit currently used as a landfill for inert materials. It is owned and operated by Los Angeles By-Products under a City of Los Angeles Department of Environmental Affairs solid waste facilities permit (Number 19-AR-1016). The site encompasses about 30 acres on the northeast corner of Strathern Street and Tujunga Avenue (**Figure 3-18**). The pit currently has a surface area of 12 acres and a maximum depth of approximately 80 feet. Surrounding land uses to the east and south are primarily residential. Sun Valley Park, a City of Los Angeles park, is located to the east across Fair Avenue. A closed sanitary landfill (Penrose Landfill) is located to the west across Tujunga Avenue. Penrose Landfill was officially closed in 1997 and is currently being used as a remote control raceway and a practice golf center. Regulatory oversight of this landfill is the responsibility of the City of Los Angeles Environmental Affairs Department (D. Allen, pers. comm., 2003).

3.4.11.2 Objective of Project Component

The primary objective of this project component is to capture stormwater collected from primarily industrial areas surrounding the site, which would alleviate flooding in the southern watershed. It is also intended to provide water conservation benefits through reuse of stormwater for industrial processes or off-site infiltration at the Tujunga Spreading Grounds. In addition, this project component would provide up to 30 acres of green space, including park land and wildlife habitat, for the community.

3.4.11.3 Description of Project Component

This project proposes to convert the existing landfill area into a surface stormwater retention and treatment area. Stormwater collection and conveyance to the pit would involve catch basins and storm drains in the surrounding streets. The existing landfill surface would be modified to create terraced side slopes with five levels (**Table 3-5**). The deepest part of the pit would be approximately 50 feet below street level. The bottom portion of the basin would be operated as a FWS wetland designed in alignment with EPA guidelines for stormwater treatment wetlands. The terraced areas above the wetland would be dry most of the time and would be available for recreational and/or habitat uses. During dry weather periods (May - October), water levels in the wetland would be maintained by repeated circulation. Most of the wetland area will be in shallow ponds. During this recirculation mode, no water would leave the project site. The basin would be lined with impervious material (geotextiles), and no onsite infiltration of stormwater would occur at this site.

During large storms, the area above the wetland would store stormwater. Stormwater captured in the basin would be circulated through the wetland, which would be designed to remove some of the pollutants. Stormwater from a 50-year storm (about 500 to 700 acre-feet depending on the project alternative) would be fully treated by the wetland over a period of four months. Stormwater would then be transferred offsite for infiltration (Alternatives 1, 2, and 4) or reuse (Alternative 3) (see **Section 3.5**).

Table 3-5
Strathern Pit Terrace Summary

Terrace	Land Use	Alternative 1	Alternative 2	Alternative 3	Alternative 4
		Area (acres)	Area (acres)	Area (acres)	Area (acres)
Top Terrace	Recreation	7	12	14	10
2nd Terrace	Wetland	11	9	8	7
3rd Terrace	Wetland	6	4	4	4
4th Terrace	Wetland	6	4	4	4
5th Terrace	Permanent Pool	1	1	1	1

Note: The 2nd, 3rd, and 4th Terrace areas include wetland and buffer zone/peripheral areas. Actual wetland area (see Table 3-6) is smaller than terrace area.

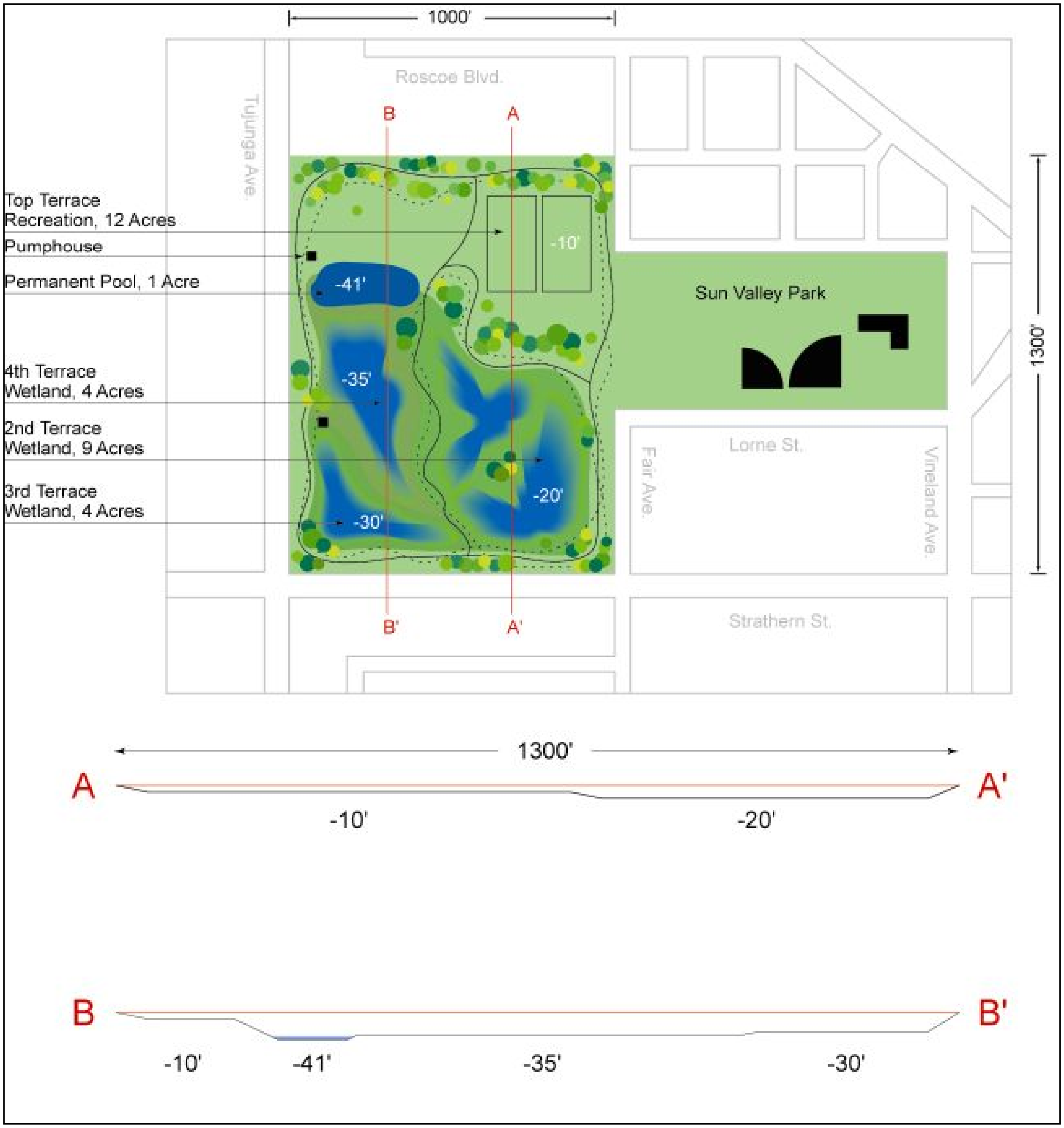
The infiltration option would require a 14,000-foot-long pipeline and a 100- to 150-horsepower pump to transport the water to the Tujunga Spreading Grounds, where the water would be used for groundwater recharge. The reuse option would require a 4,800-foot pipeline and a 150 hp pump to transport the water to Vulcan Gravel Processing Plant, where the water would be used for gravel washing (**Table 3-6**).

Table 3-6
Strathern Pit Options

Plan Alternative	Maximum depth below street	Wetland Area	Booster Pump Size	Destination of Stormwater
1	51 feet	17 acres	150 hp	Infiltration at Tujunga Spreading Grounds
2	41 feet	13 acres	150 hp	Infiltration at Tujunga Spreading Grounds
3	40 feet	12 acres	150 hp	Reuse at Vulcan Gravel Processing Plant
4	42 feet	11 acres	100 hp	Infiltration at Tujunga Spreading Grounds

The remaining open space at the site can be used for recreational and habitat purposes, as shown in **Figure 3-18.** The recreational facilities could be linked to the adjacent Sun Valley Park. The wetland will provide riparian habitat, although the habitat value may be affected by regular maintenance activities, including removal of sediment and trash that may bypass upstream BMPs (e.g. a settling forebay).

Figure 3-18
Concept Design of Multi-use Park at Strathern Pit



Note: Acreages shown are for Alternative 2 (see Section 3.5).

3.4.12 Street Storage

3.4.12.1 Existing Setting

The Street Storage component would be constructed underground within existing roadways in the project area, potentially in the vicinity of existing utility lines for water, sewer, gas, oil, and communications. Depending on the segment, adjacent surface uses would include residential, commercial, and/or industrial uses.

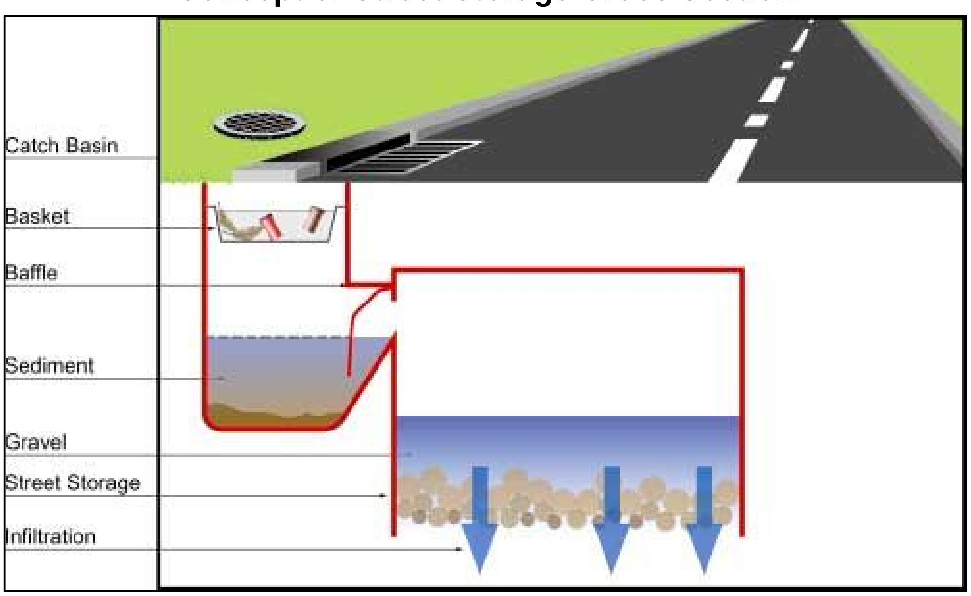
3.4.12.2 Objective of Project Component

The objective of this component is to supplement the flood control capacities of other project components by capturing and infiltrating stormwater collected from roadways in the southern portion of the watershed.

3.4.12.3 Description of Project Component

This component involves installation of underground storage tanks and infiltration galleries within existing roadways. This component is proposed in the southern portion of the watershed, which is the area below the intersection of Interstate 5, Tuxford Street, and San Fernando Road. Each unit of street storage would be 6 feet deep and have a width equal to that of the street. The units would be filled with gravel to maintain the street's structural integrity (**Figure 3-19**). Street surfaces would be repaved to original condition once project construction has been completed. The exact locations of the tanks are to be determined. The total length of roadways that would be used for street storage range from 0.4 to 5.1 miles, depending on the alternative (see **Section 3.5**).

Figure 3-19
Concept of Street Storage Cross Section



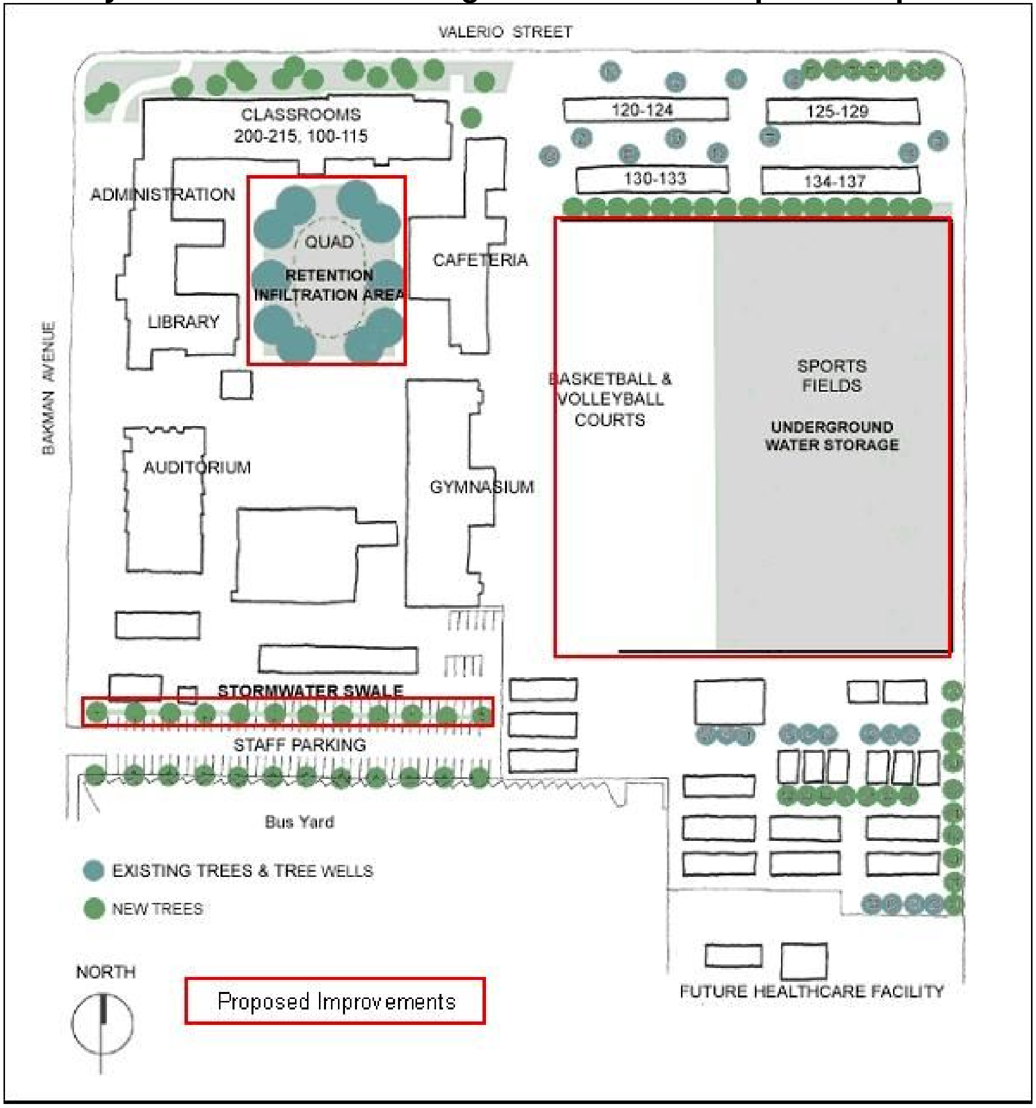
3.4.13 Sun Valley Middle School

3.4.13.1 Existing Setting

Sun Valley Middle School is located on Bakman Avenue and is bounded by Sherman Way on the south, Fair Avenue on the east, and Valerio Street on the north. It is located within District B of the LAUSD system, and serves approximately 3,100 students from grades 6 through 8 distributed in three tracks. The school property includes permanent and temporary school buildings, a grass playing field, paved basketball/volleyball courts, a parking lot, and a wooded area in the southeast corner of the site (**Figure 3-20**). A grassy area known as the Quad is located in the northwestern portion of the site, and is enclosed on three sides by the administration building, library, and cafeteria.

A school bus yard is located on the southwestern corner of the property. Surrounding land uses to the east, north, and west are residential, and commercial properties are located to the south across from Sherman Way. The runway of Burbank Airport is located approximately 0.5 mile to the east.

Figure 3-20
Sun Valley Middle School Existing Facilities and Proposed Improvements



3.4.13.2 Objective of Project Component

The primary objective of this project component is to capture and infiltrate stormwater collected from the Sun Valley Middle School site and surrounding residential areas. This would help alleviate flooding in the southern watershed and increase groundwater recharge. Some of the captured stormwater would be used for irrigation of landscaped areas within the school site, providing water conservation benefits. Other objectives include improving the visual character and air quality and reducing energy use through tree planting.

3.4.13.3 Description of Project Component

The Phase 1 project proposes to use the school's sports field, staff parking lot; and Quad area.

The **sports field** (the grass playing field and the paved basketball/volleyball courts) would be modified to create a shallow depression for collecting stormwater. The 4.3-acre sports field would be excavated and graded to create a surface that slopes from the existing grade at the northwest corner to 4 feet below existing grade at the southeast corner, at a rate of one percent. Once excavation is complete, the existing paved area would be repaved and the field resodded.

Catch basins and a stormwater inlet would be installed in Fair Avenue to convey stormwater into the sports field. A retaining wall would be installed around the east and south edges of the field with a maximum height of 4 feet to contain water in the sports field.

Five 10,000-gallon underground storage tanks would be installed below the sports field. Each tank would be approximately 6 feet in diameter and 50 feet long. A trench drain and a pipe system would be installed to direct the stormwater collected on the field surface into the storage tanks below. A horizontal perforated pipe system would be installed underneath the storage tanks. When the storage tanks are full, the excess stormwater would infiltrate into the ground below through the perforated pipes.

Some of the stormwater collected in the storage tanks under the sports field would be reused for onsite irrigation. A sump pump would be installed in the storage tank area to feed the proposed irrigation system, which would provide water for the playing field, Quad, staff parking, and other landscaped areas. A number of trees would be planted around the school buildings to provide shade and visual improvements for the campus.

The **staff parking lot** would be modified to collect and infiltrate stormwater through dry wells. A planter would be installed at the north row of the parking lot between the curbs of the existing parking stalls. The dimensions of the planter would be 5.5 feet by 390 feet. Approximately 22 dry wells (19 feet deep) would be installed within the planter. The surface openings of the dry wells would be encircled with a grassy swale area. Runoff from the west side of the school and the parking area would be channeled into the planter area and percolate into the ground through the dry wells.

The **Quad area** would be excavated and depressed to a depth of 2 feet to collect stormwater from the rooftops of the surrounding buildings. Five dry wells, similar to those proposed in the staff parking lot, would be installed in the depressed Quad area to infiltrate the collected stormwater.

Operation and maintenance requirements for this component are maintenance of landscaped areas, maintenance of irrigation and disinfection system, oil/water/sediment separation system cleaning, storage tank cleaning, pump maintenance, catch basin and drain cleaning, and total system inspection.

3.4.14 Tree Planting and Mulching

3.4.14.1 Existing Setting

The Tree Planting and Mulching component is proposed as a voluntary community involvement program. Therefore, the locations of the component cannot be determined at this time. Project sites for Tree Planting and Mulching would consist of existing businesses and residences in the project area.

3.4.14.2 Objective of Project Component

The objective of this project component is to improve air quality, provide aesthetic amenities and wildlife habitat, and reduce energy consumption (by providing shade for buildings) throughout the watershed. Limited flood control, water conservation, and water quality benefits are expected from: replacement of paved areas with mulch, grass, or other pervious surfaces; and temporary storage of water in tree canopies, root systems, and tree wells. This component also promotes community involvement and public outreach in watershed management and environmental issues.

3.4.14.3 Description of Project Component

Participation in the Tree Planting and/or Mulching program would be voluntary. Expected participation rates range between 20 and 40 percent of the properties within the watershed (**Table 3-2**). A coordinated outreach and education effort will provide for a faster participation rate towards implementation of this project component.

Tree Planting. Depending on the plan alternative, 17,000 to 35,000 trees will be planted on participating residential, commercial, and industrial parcels throughout the watershed. Tree species to be planted include: camphor (*cinnamomum camphora*), fairmont maidenhair (*ginkgo biloba* “fairmont”), jacaranda (*jacaranda mimosifolia*), swan hill olive (*olea europaea* “swan hill”), tipu (*tipuana tipu*) and brisbane box (*tristania conferta*). These species have been selected for low emissions of volatile organic compounds, low rate of root spread, relatively sound structure and long lives, as evaluated by the LADWP Green LA program. In addition to this list developed by LADWP, appropriate native species will be considered for the Tree Planting component, depending on the compatibility of tree characteristics with site conditions. For participating single-family residential properties, trees would be acquired free of charge through the LADWP Trees for a Green LA program, and would be planted and maintained by the property owners. For multi-family residential, commercial, and industrial properties, it is anticipated that trees would be planted and maintained through the use of professional services.

Mulching. The mulching component proposes to recycle green waste generated at participating sites into mulch for use onsite. This component is expected to reduce the waste stream to landfills and reduce the irrigation requirements at participating sites. The mulching program would be operated in conjunction with a local solid waste management agency, e.g. the City of Los Angeles Department of Public Works. The agency would conduct a training and certification program for professional landscapers and gardeners on watershed-friendly landscape management. Participating properties would use the services of the certified landscapers and gardeners, who would process green waste into mulch and reuse it for landscaping onsite.

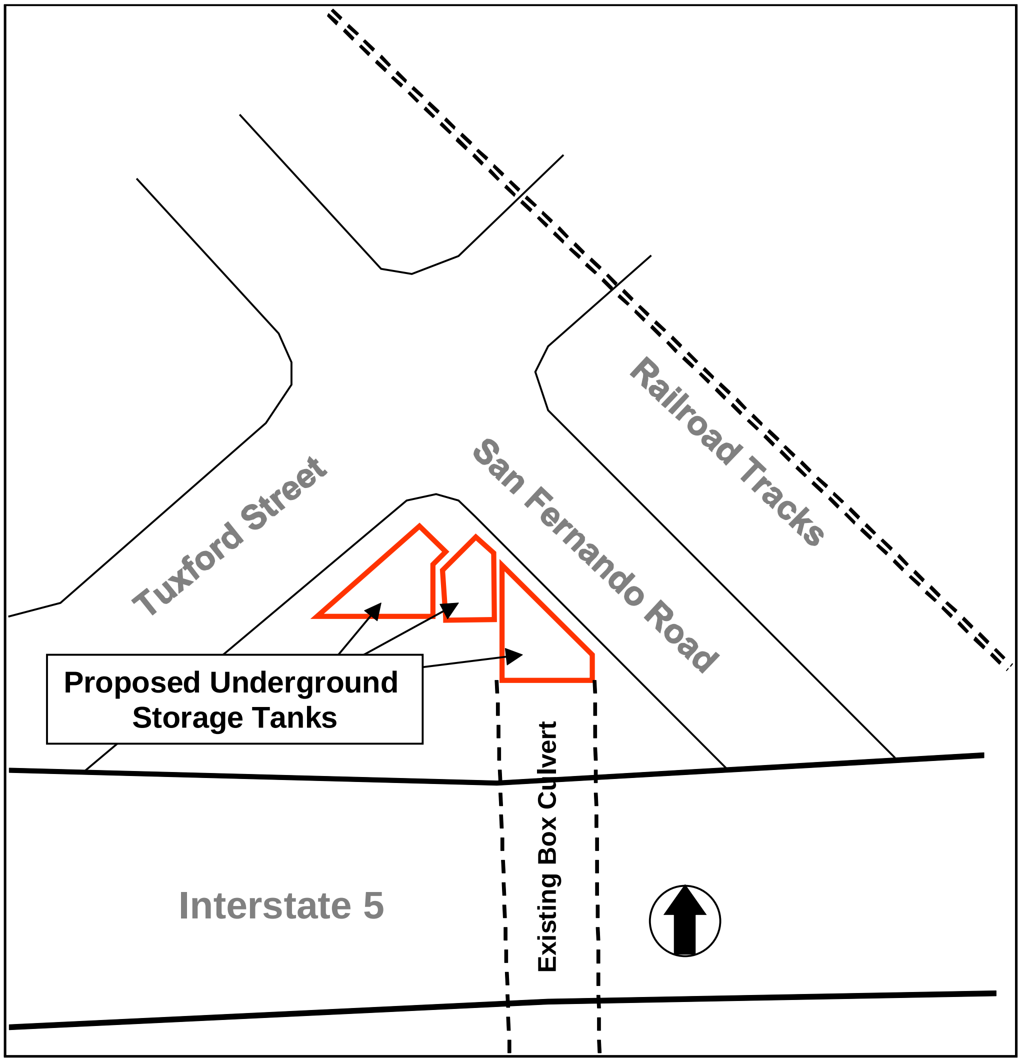
3.4.15 Tuxford Green

3.4.15.1 Existing Setting

The proposed site for this Phase 1 project is the triangular area bounded by Tuxford Street on the west, San Fernando Road on the north, and Interstate 5 (Golden State Freeway) on the south

(**Figure 3-21**). The site, named "Tuxford Green" for the purpose of the Watershed Management Plan, is a vacant site approximately 1 acre in area, and is owned by the City of Los Angeles. The site consists of two portions: the western portion with an unpaved dirt surface and the eastern portion with a concrete surface. The eastern portion is adjacent to and serves as the entry way for a box culvert, which consists of seven 6.5 foot wide by 2.5 foot high concrete culverts arranged side-by-side. During storms, the box culvert channels runoff collected at the Tuxford-San Fernando intersection area, passes it under I-5, and discharges it on the south side to the north end of Tujunga Avenue.

Figure 3-21
"Tuxford Green" Vicinity



The Tuxford-San Fernando intersection is the lowest point (sump) in the upper half of Sun Valley Watershed. Despite the existing box culvert, the roadways at this intersection flood even in minor storm events because of the sump condition and the fact that runoff is conveyed to the box culvert by surface cross gutters in the street. As a result of frequent flooding problems, the intersection has become a symbol of the flooding problem in the Sun Valley area.

The Vulcan Gravel Processing Plant is located on the opposite corner (north) of the intersection from the project site. The east and west corners of the intersection are occupied by commercial and industrial facilities. MTA bus stops are located near the intersection, one each on the western and eastern corners and facing San Fernando Road. The Metrolink railroad is located along San Fernando Road on the northeastern side, between North San Fernando Road and San Fernando Road.

3.4.15.2 Objective of Project Component

The primary objective of this component is to reduce flooding at the intersection of Tuxford Street and San Fernando Road. In addition, this project component would improve the visual character of the site through landscaping. Infiltration of captured stormwater is not proposed at this site.

3.4.15.3 Description of Project Component

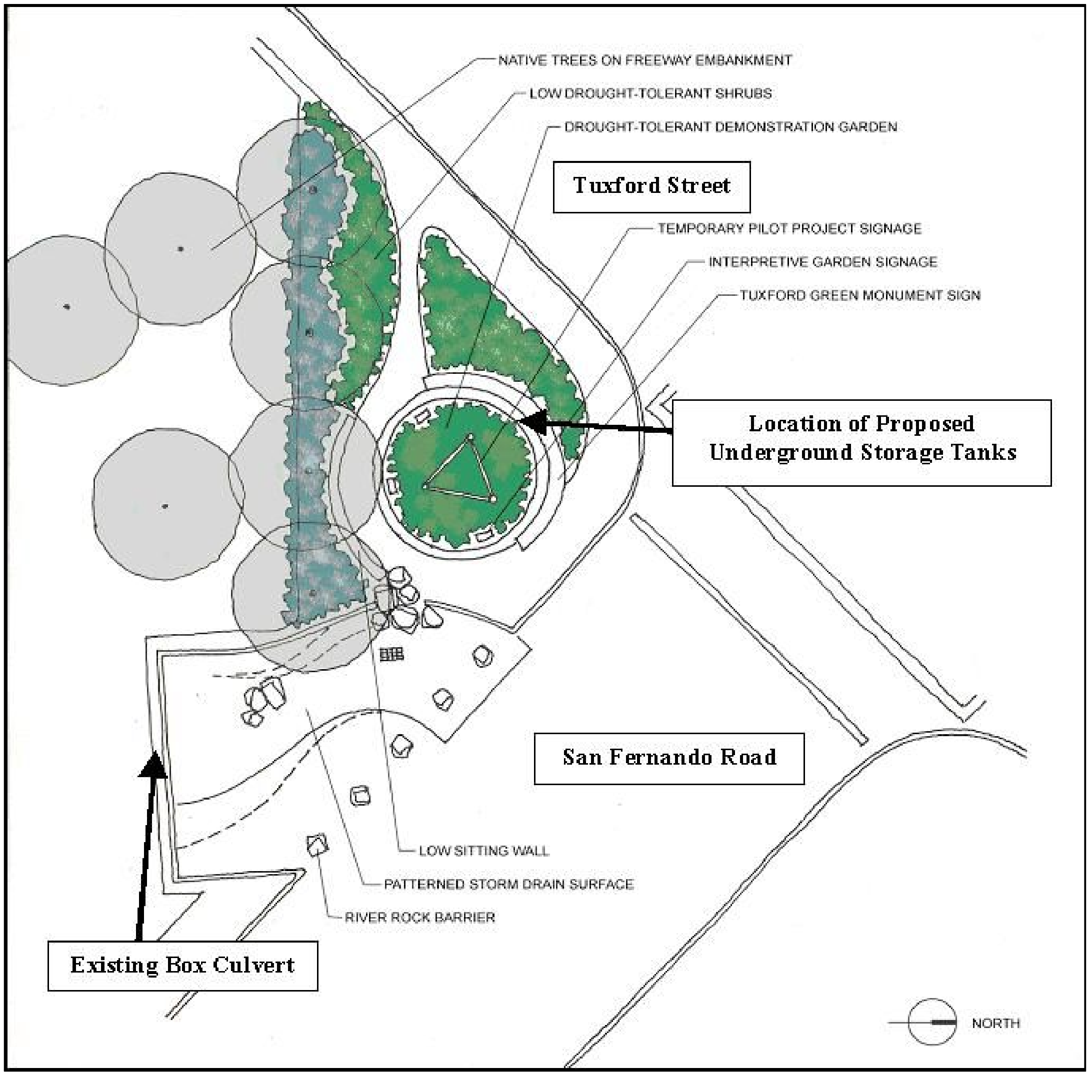
This component consists of two phases. **Phase 1** involves installation of underground storage tanks on the southern corner of the Tuxford-San Fernando intersection (Tuxford Green) for stormwater storage. The three tanks would have a combined total storage capacity of 330,000 gallons. Catch basins and underground pipelines would be constructed within Tuxford Street and San Fernando Road near the intersection to capture and convey stormwater to the storage tanks. Water in excess of the tanks' storage capacity would exit the tanks through overflow pipes into the existing box culverts under Interstate 5.

In Phase 2 of the Phase 1 project, additional catch basins would be installed on San Fernando Road, Glenoaks Boulevard, and Tuxford Street to capture additional stormwater runoff. Underground pipelines would be constructed along San Fernando Road, Tuxford Street, and along Glenoaks Boulevard to convey the water from the catch basins to the storage tanks installed in Phase 1.

The surface area above the tanks would be landscaped, and a demonstration garden with native plants and signage would be created to improve the aesthetic appeal of the area and provide opportunities for community education on water and flood control issues. It is proposed that local river rocks, which are used in historic buildings in Sun Valley's downtown area, be used to surface retaining walls and exposed concrete surfaces. An irrigation system would be installed to reuse some of the collected stormwater for irrigating the new landscaped areas. In addition, the MTA bus stop located at the intersection could be relocated to the Tuxford Green site, providing a more comfortable waiting environment for the bus riders (**Figure 3-22**).

Operation and maintenance requirements for this component are maintenance of landscaping, irrigation system maintenance, sediment removal from the storage tanks, pump maintenance, catch basin and drain cleaning, and total system inspection.

Figure 3-22
Proposed Landscaping of the "Tuxford Green"



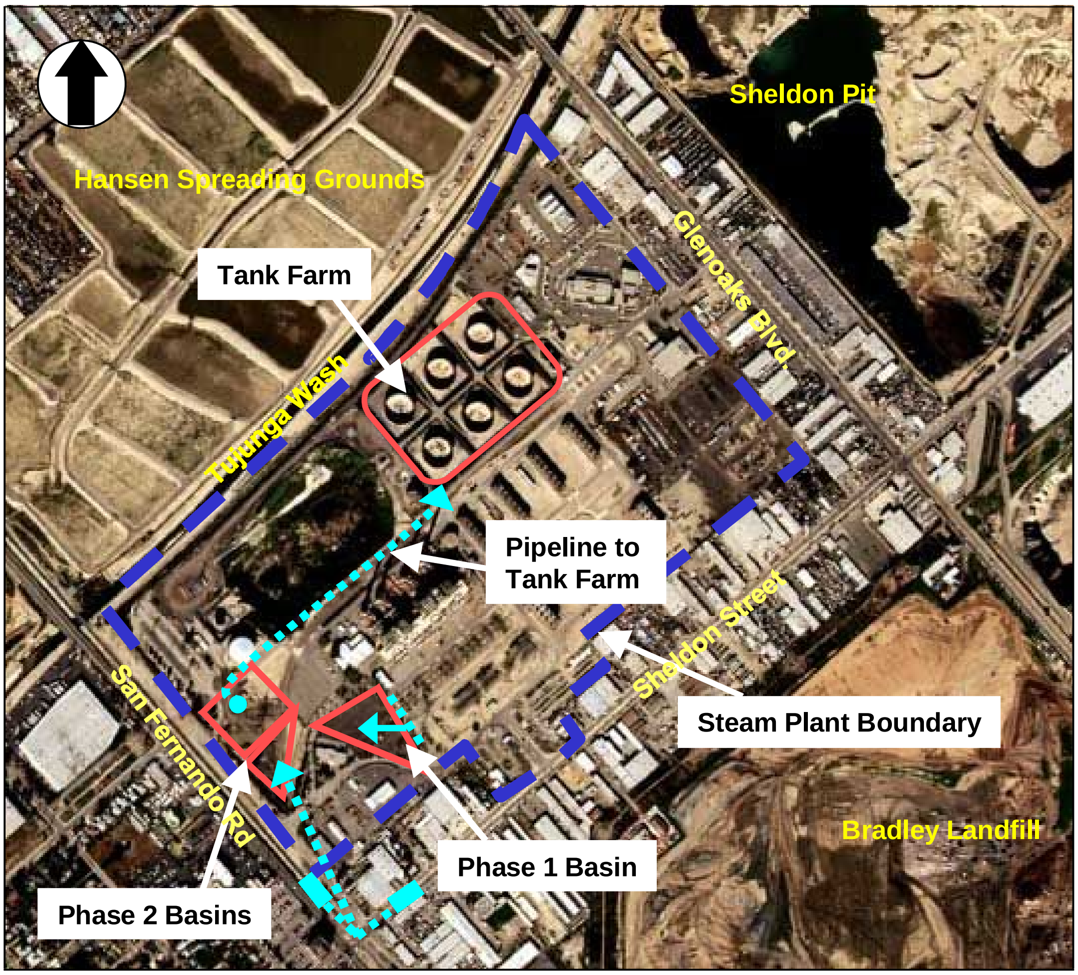
3.4.16 Valley Steam Plant

3.4.16.1 Existing Setting

The Valley Steam Plant is a power generating facility owned and operated by LADWP. The 155-acre facility is located at 11801 Sheldon Street, and is bounded by Glenoaks Boulevard to the northeast, Sheldon Street to the southeast, San Fernando Road to the southwest, and the Tujunga Wash to the northwest (**Figure 3-23**). A portion of the plant is currently under construction to convert it from an oil-based power plant to a natural gas-powered facility. The plant consists of the following areas: 1) a natural gas power generating facility (currently under construction); 2) parking lot and maintenance yard area; 3) cooling towers, existing steam plant and transformers; 4) an exhausted gravel pit; and 5) a tank farm consisting of six former oil tanks and surrounding berms.

The land uses surrounding the facility are primarily industrial and commercial. The Hansen Spreading Grounds are located to the northwest across Tujunga Wash. Metrolink's Antelope Valley Line parallels San Fernando Road to the southwest of the site. Boulevard Pit, an active gravel pit, is located to the west across San Fernando Road. Other uses located nearby on San Fernando Road are an emergency medical clinic, a hospital, two motels, and other commercial and light industrial uses. Nearby land uses on Sheldon Street and Glenoaks Boulevard are primarily industrial. Bradley Landfill is located to the southeast across Sheldon Street. The closest residential property is located approximately one-half mile north of the facility.

Figure 3-23
Valley Steam Plant and Vicinity



3.4.16.2 Objective of Project Component

The primary objective of this project component is to capture and infiltrate stormwater collected from the Valley Steam Plant property and the surrounding commercial/industrial areas. This would help reduce the flooding problem at the Tuxford-San Fernando Road intersection, and increase groundwater recharge. In addition, it would provide recreational facilities and aesthetic amenities for the plant employees. Opportunities to create wildlife habitat may also be considered.

3.4.16.3 Description of Project Component

This component consists of two phases, each involving construction of stormwater detention/infiltration basins on the Valley Steam Plant property.

In **Phase 1**, a 3.5-acre surface infiltration basin would be constructed. Catch basins and a pipeline would be installed on the plant property to convey stormwater to the infiltration basin, where water would percolate into groundwater. The area around the basin would be landscaped to provide a recreation/lunch area for the plant employees (**Figure 3-24**).

In **Phase 2**, a 6-acre retention area, comprised of a detention basin and an infiltration basin, would be constructed near the Phase 1 basin. Additional catch basins and a pipeline would be installed in the surrounding streets to collect and convey stormwater into the Phase 2 retention area.

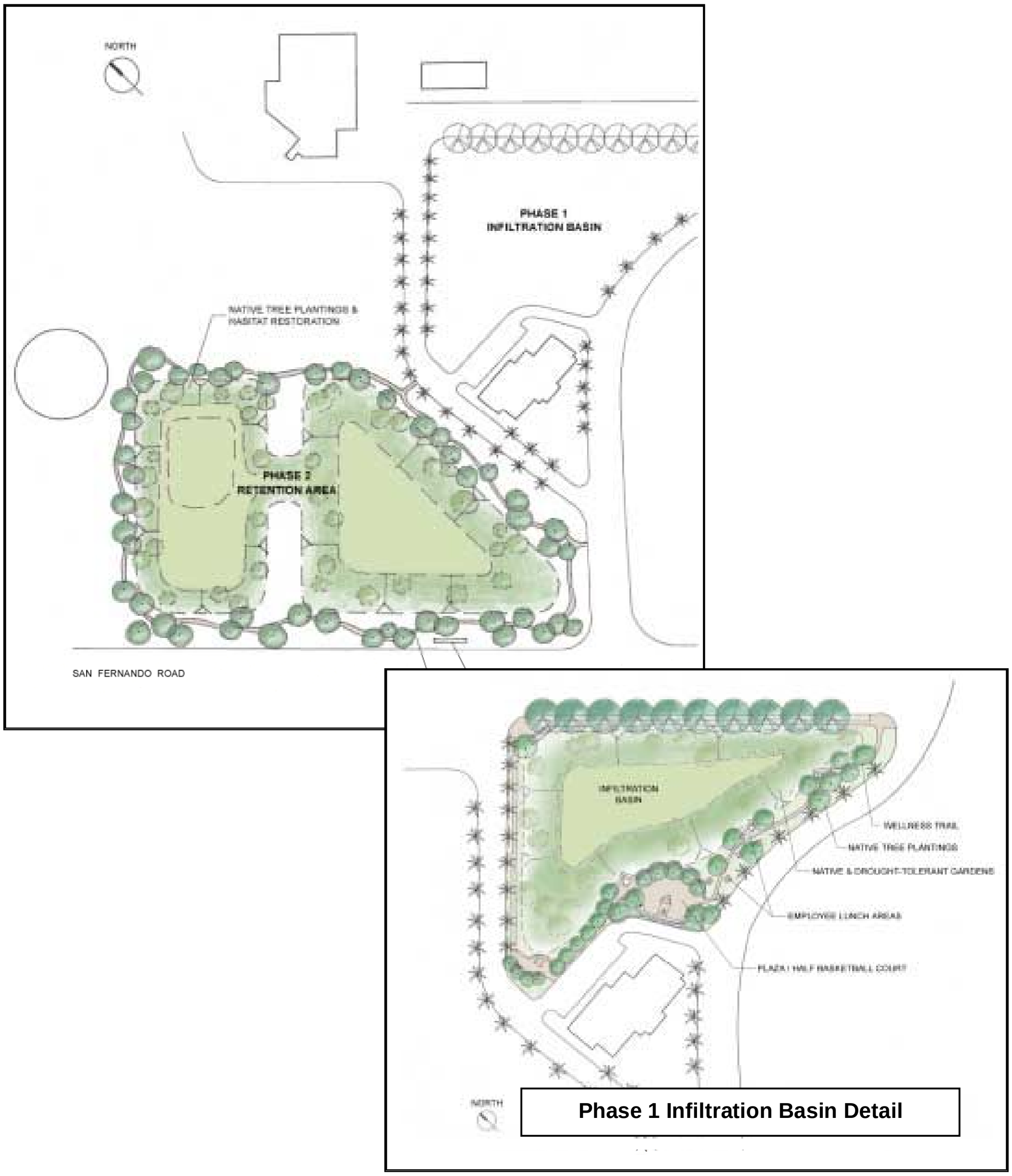
During smaller storms, all of the stormwater would percolate to groundwater through the bottom of the infiltration basin. During large storms, some of the stormwater would be transported from the Phase 2 retention area to the existing tank farm. The excess stormwater would be stored temporarily in up to four of the six former oil tanks and the bermed area surrounding the tanks, as necessary. [The tanks would be appropriately prepared prior to use.] Two 3,500 gallons per minute (gpm) pumps and a pipeline would be installed on the plant property for transporting water from the retention area to the tank farm. Once the storm has passed, the water stored in the tank farm area may be returned to the infiltration basin by gravity through the same pipeline or may be transferred to another location for reuse.

The Phase 2 retention area would be landscaped and modified to provide additional employee lunch and recreation areas (**Figure 3-24**). A native and drought tolerant garden with interpretive signage and identification of plants could be created to provide environmental education opportunities. The Phase 2 detention basin may be used to provide approximately 3 acres of wetland habitat. A portion of the collected stormwater may be used to irrigate the proposed landscaping and plantings.

Both Phase 1 and Phase 2 basins would need to be sited to avoid power line bases and other non-movable objects located on the plant property. Therefore, the proposed locations and shapes of the basins may be somewhat modified at the time of detailed design.

Operation and maintenance requirements for this component are landscaping and irrigation system maintenance; operation and maintenance of the pumps and pump control panel; mosquito control; sediment removal from the basins; oil/water/sediment separation system cleaning; catch basin and drain cleaning; inspection of the pumps, basins, and tank farm berms; and total system inspection.

Figure 3-24
Proposed Landscaping and Plantings at the Valley Steam Plant



3.4.17 Vulcan Gravel Processing Plant

3.4.17.1 Existing Setting

The Vulcan Materials Company Gravel Processing Plant is located just north of the intersection of Tuxford Street and San Fernando Road. The 53-acre plant is bounded by Tuxford Street and Bradley Avenue to the east and by San Fernando Road and Bradley Landfill to the northwest. The plant processes gravel excavated at Boulevard Pit. The gravel is transported to the plant by conveyor belts. The plant is comprised of gravel processing facilities and paved open space areas in the southeast, and unpaved dirt and stockpiles in the northwest.

Surrounding land uses are Bradley Landfill to the northwest, commercial and industrial facilities to the west and east, and Interstate 5 to the south. The Tuxford Green Phase 1 project is located on the opposite corner of the Tuxford-San Fernando intersection. The Metrolink railroad is located between North San Fernando Road and San Fernando Road and is adjacent to the southwestern margin of the plant.

3.4.17.2 Objective of Project Component

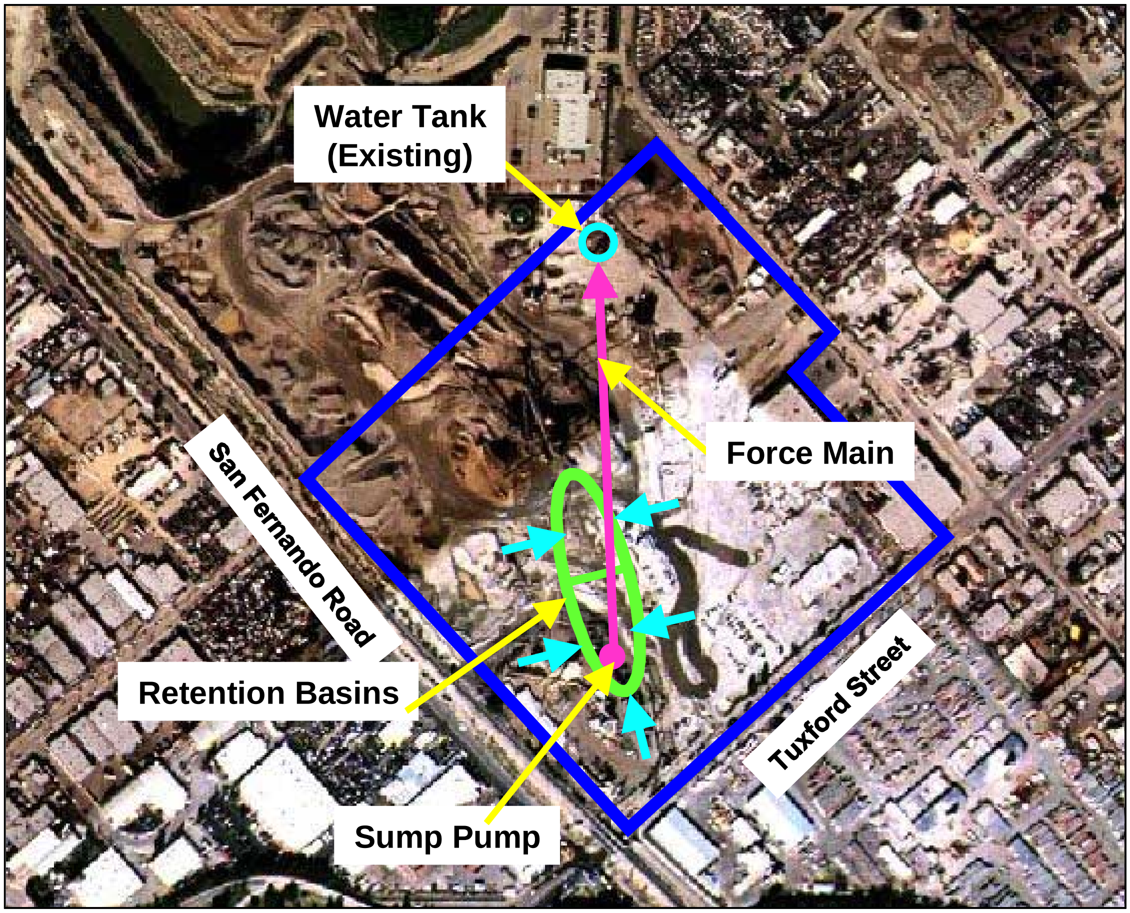
The primary objective of the project component is to capture stormwater collected from the gravel processing plant property. This would help to reduce flooding at the Tuxford-San Fernando intersection. The collected stormwater may be reused for gravel washing operations at the plant, providing water conservation benefits.

3.4.17.3 Description of Project Component

The proposed project involves construction of a 6-acre surface retention area on the plant property to capture stormwater (**Figure 3-25**). To channel stormwater into the retention area, the site may be graded to convey runoff by sheet flow, or a catch basin and an underground pipeline system may be installed. A 10-horsepower sump pump and pipeline is proposed to convey some of the collected stormwater to the existing 500,000-gallon storage tank from the retention area. The stored stormwater may be reused onsite for gravel washing operations. No landscaping is proposed at this site.

Operation and maintenance required for this component includes pump operation, pump maintenance, sediment removal from the basins, stand pipe cleaning, pump inspection, and total system inspection.

Figure 3-25
Vulcan Gravel Processing Plant and Vicinity



3.5 ALTERNATIVES DESCRIPTION

By combining different subsets of the plan components described above, LACDPW has defined four sample alternatives of the Watershed Management Plan:

- Alternative 1 – Maximize Infiltration
- Alternative 2 – Maximize Water Conservation
- Alternative 3 – Maximize Reuse
- Alternative 4 – Urban Storm Protection

The plan components included in each alternative are presented in **Table 3-7** below. The plan components and the alternatives were developed by LACDPW and a team of consultants in consultation with the Stakeholders (see **Section 2.1, Project Background**). Since the Watershed Management Plan will be implemented over 10 years, a definitive listing of project components to be contained in the final Plan is not possible. This Program EIR considers the environmental impacts of each of the project components individually as well as the impacts of the four sample alternatives. LACDPW intends to adopt all components of the Watershed Management Plan.

Table 3-7
Plan Components in Each Alternative

Plan Components	Alternatives			
	1 Maximize Infiltration	2 Maximize Water Conservation	3 Maximize Reuse	4 Urban Storm Protection
Cal Mat Pit			✓	✓
New Park on Wentworth	✓			
Onsite BMPs (% participation)	40 %	20 %	40 %	20 %
Parking Lot on Sherman Way	✓	✓		✓
Power Line Easement (length)	1.1 miles	0.5 miles	0.9 miles	0.8 miles
Roscoe Elementary School	✓			
Sheldon Pit and Tujunga Wash Transfer		✓		
Stonehurst Elementary School	✓			
Stonehurst Park	✓			
Storm Drains	✓	✓	✓	✓
Strathern Pit	Infiltration*	Infiltration*	Reuse**	Infiltration*
Street Storage (length of streets required)	1.5 miles	0.6 miles	5.1 miles	0.4 miles
Sun Valley Middle School	✓	✓	✓	✓
Sun Valley Park	✓	✓	✓	✓
Tree Planting and Mulching (% participation)	40 %	20 %	40 %	20 %
Tuxford Green	✓	✓	✓	✓
Valley Steam Plant	✓	✓	✓	✓
Vulcan Gravel Processing Plant	✓	✓	✓	✓

* Infiltration in Tujunga Spreading Grounds
** Reuse of stormwater at Vulcan Gravel Processing Plant

3.5.1 Alternatives Development Process

The alternatives development process is summarized below. For more details on each step of the process, readers are referred to the technical memorandum (tech memo) indicated in parentheses below. (See **Section 2.9** for availability of the technical memoranda and other related documents.)

Identify Potential Project Components. The first step in developing the Watershed Management Plan was the identification of various strategies available for stormwater management (e.g., detention and infiltration basins, wetlands, cisterns, education, and reduction of impervious surfaces). Then, an evaluation was conducted to determine potential project locations within the watershed where specific strategies could be implemented. Each prospective project site was analyzed for its opportunities with respect to meeting the project objectives and for barriers to implementation (Tech Memo 1).

Assemble Project Components into Alternatives and Evaluate. In the next step, LACDPW's F0601, a hydrologic model based on a modified rational method, was used to evaluate the required flood control capacity of the various project components. (The hydrologic model preparation process is described in Tech Memo 2.) Various project components were then assembled into 22 alternatives (Tech Memo 3). The 22 alternatives were evaluated and refined to form six alternatives (Tech Memo 4) then further screened to the final four alternatives (Tech Memo 5). Each alternative was developed to create a combination of project components that emphasized a certain process (e.g. infiltration or reuse) while meeting the primary project objective of flood control.

During the screening process, project components with fewer constraints to implementation were incorporated into all alternatives. Project components with higher levels of uncertainty were removed from one or more of the alternatives in order to maintain the feasibility of each alternative. For example, several of the project components involve converting the usage of privately owned properties, e.g. inert landfills. Implementation of such project components is contingent upon the owners and LACDPW reaching an agreement on their involvement in the proposed project.

Conduct Benefit-Cost Analysis. In the final step, a benefit-cost analysis was completed for each of the four alternatives (Tech Memo 5). The criteria used in the analysis were flood control, water quality, water conservation, energy reduction, green waste reuse, air quality improvement, ecosystem restoration, recreation, and property values. This Program EIR includes evaluation of all final four alternatives to maximize the flexibility in the future use of this document. Analysis of additional alternatives as required by CEQA, e.g. the "No Project" alternative, is presented in **Section 7.**

3.5.2 Alternative 1 – Maximize Infiltration

In Alternative 1, all stormwater retention facilities would be designed to capture flows from up to 50-year frequency storm. The total capacity of retention facilities included in this alternative is 2,047 acre-feet. During a 50-year frequency storm, the net volume of stormwater runoff discharged to the Los Angeles River from the watershed would be 21 acre-feet. This alternative incorporates more of the small-scale project components (e.g. schools, parks, and 40 percent participation in Onsite BMPs) to capture and infiltrate stormwater throughout the watershed.

3.5.3 Alternative 2 – Maximize Water Conservation

In Alternative 2, stormwater retention facilities located north of Strathern Street would capture flows from up to 50-year frequency storms, and facilities located south of Strathern Street would capture flows from up to the 10-year frequency storm. The total capacity of retention facilities included in this alternative is 2,107 acre-feet. The trunk storm drain in this alternative would be connected to the existing collector drain (Project 5219) at the south end of the watershed. During a 50-year frequency storm, the net volume of stormwater runoff discharged to the Los Angeles River from the watershed would be 426 acre-feet. This alternative yields the largest water conservation benefit among the four alternatives due to the inclusion of the Sheldon Pit and Tujunga Wash Transfer component, and also maximizes opportunities for provision of wildlife habitat.

3.5.4 Alternative 3 – Maximize Reuse

In Alternative 3, all stormwater retention facilities would be designed to capture flows from up to the 50-year frequency storm. The total capacity of retention facilities included in this alternative is 2,023 acre-feet. During a 50-year frequency storm, the net volume of stormwater runoff discharged to the Los Angeles River from the watershed would be 8 acre-feet. Alternative 3 would maximize reuse of captured stormwater. Stormwater captured in the Strathern Pit component would be reused for gravel washing at the Vulcan Gravel Processing Plant. In addition, Onsite BMPs would be designed to capture up to 50-year storm flows to maximize onsite reuse of collected stormwater such as irrigation.

3.5.5 Alternative 4 – Urban Storm Protection

In Alternative 4, all stormwater retention facilities throughout the watershed would be designed to capture flows from up to the 10-year frequency storm. The total capacity of retention facilities included in this alternative is 1,443 acre-feet. The Trunk Storm Drain in this alternative would be connected to the existing collector drain at the south end of the watershed. During a 50-year frequency storm, the net volume of stormwater runoff discharged to the Los Angeles River from the watershed would be 592 acre-feet. This alternative relies more heavily on conveyance systems (i.e., storm drains) during the 50-year frequency storm than the other alternatives.

3.6 MONITORING PLAN

3.6.1 Phase 1 Projects Monitoring Plan

A monitoring plan has been developed for the following five Phase 1 projects: Cal Mat Pit, Sun Valley Middle School, Tuxford Green, Vulcan Gravel Processing Plant, and Valley Steam Plant. The monitoring plan is summarized below and is described in further detail in a separate report, "Monitoring Plan for the Sun Valley Watershed Pilot Program." (See **Section 2.9** for availability of related documents.)

The monitoring plan consists of three elements: 1) flood control and water conservation monitoring, 2) stormwater quality monitoring, and 3) groundwater quality monitoring.

3.6.1.1 Flood control and water conservation monitoring

In order to quantify the flood control and water conservation benefits of the projects, flow measuring devices will be installed in the proposed storm drains and other conveyance systems. Flow would be measured at each point of entry into the proposed stormwater management facility (e.g. a retention basin) and at each stormwater reuse location. Measuring devices would be activated automatically and record the water level continuously during storm events. Existing rain gages in the area would be used to trigger sampling events and to check the flow data collected by the flow measuring devices. Additional rain gages may also be installed near the project sites.

3.6.1.2 Stormwater quality monitoring

The objectives of stormwater quality sampling are to characterize the types of pollutants in stormwater entering each site, to evaluate the pollutant removal rate of each facility, and to monitor the quality of stormwater being infiltrated or reused. Automated stormwater samplers are proposed for collection of composite samples, and field personnel would collect discrete grab samples during storm events. For most of the Phase 1 project sites, a sampling frequency of at least four times per year is recommended. (The average number of storms with greater than ½ inch of rainfall is 10 per year in the project area.) It is proposed that one stormwater sample be collected at each designated influent and treated effluent location for each of the recorded storm events. **Appendix G** lists the constituents proposed for stormwater quality analysis.

3.6.1.3 Groundwater monitoring

Monitoring of groundwater levels and water quality is proposed at Phase 1 project sites where infiltration of stormwater is proposed (Cal Mat Pit, Valley Steam Plant, and Sun Valley Middle School). The objective of groundwater monitoring is to evaluate the effects of stormwater infiltration on groundwater flow, level and quality. In addition to groundwater quality, soil pore water quality in the vadose zone would be measured using lysimeters. The objective of water quality monitoring in the vadose zone is to evaluate the effectiveness of the soil matrix in removing pollutants from stormwater being infiltrated at the project sites before it reaches the water table. **Appendix G** lists the constituents proposed for groundwater and soil pore water quality analysis.

3.6.2 Long-term Monitoring Plan

The monitoring network will continue to be expanded as project components are implemented.

3.7 IMPLEMENTATION

The Sun Valley Watershed Management Plan is a long-range plan for stormwater management. Various components are planned for implementation over the next 10 years, beginning in 2004.

The following five plan components have been defined as "Phase 1" projects of the Watershed Management Plan:

- Cal Mat Pit (included in Alternatives 3 and 4 only)
- Sun Valley Middle School (all alternatives)
- Tuxford Green (all alternatives)
- Valley Steam Plant (all alternatives)
- Vulcan Gravel Processing Plant (all alternatives)

The objective of the Phase 1 projects is to demonstrate the effectiveness of non-traditional stormwater management techniques used throughout the Watershed Management Plan. The Phase 1 projects are intended to be completed in a relatively short timeframe (1 to 3 years) and accomplish visible results to continue to build community support for the overall Watershed Management Plan.

LACDPW will coordinate with various agencies and parties for project implementation. **Table 3-8** summarizes the roles and responsibilities of other agencies as known at this time.

Table 3-8
Agencies and Parties with Potential Roles in Project Implementation

Action	Implementing Agencies or Parties
General planning & coordination	• LACDPW
Fund raising	• LACDPW, City of Los Angeles Department of Public Works, Department of Recreation and Parks, and LADWP
Construction	
Stormwater retention facilities	• LACDPW
Storm drains	• LACDPW (Trunk drains and laterals A through D) • City of Los Angeles Department of Public Works (City laterals)
Tujunga Wash Diversion	• Army Corps of Engineers • LACDPW, City of Los Angeles Department of Public Works, and LADWP
Onsite BMPs	• LACDPW, City of Los Angeles Department of Public Works, and ULARA Watermaster • Participating property owners (purchase units and install) • LADWP and California Department of Water Resources (incentive programs for BMP installation)
Tree Planting	• LADWP (Provide trees free of charge through Green LA program) • TreePeople (outreach, assistance, and education) • Participating property owners (planting) • City of Los Angeles Environmental Affairs Department • City of Los Angeles Department of Public Works
Mulching	• City of Los Angeles Department of Public Works (Train and certify landscapers and gardeners)
Recreational facilities	• City of Los Angeles Department of Recreation and Parks (new public parks, e.g. Cal Mat Pit, Sheldon Pit, Strathern Pit, New Park on Wentworth, and Tuxford Green) • LADWP • LACDPW
Wildlife habitat areas	• City of Los Angeles Department of Recreation and Parks • LACDPW and City of Los Angeles Department of Public Works
Operation and Maintenance	
Stormwater retention facilities	• LACDPW • City of Los Angeles Department of Public Works • Other property owners (Schools, Vulcan Gravel Processing Plant, and Parking Lot on Sherman)
Storm drains	• LACDPW (Trunk drains and laterals A through D) • City of Los Angeles Department of Public Works (City laterals)
Tujunga Wash Diversion	• Army Corps of Engineers • LACDPW, City of Los Angeles Department of Public Works, and LADWP
Onsite BMPs	• LACDPW, LADWP, City of Los Angeles Department of Public Works, and ULARA Watermaster • Participating property owners
Tree Planting	• Participating property owners • City of Los Angeles Environmental Affairs Department • City of Los Angeles Department of Public Works
Mulching	• Participating property owners
Recreational facilities	• City of Los Angeles Department of Recreation and Parks (same as above in Construction)
Wildlife habitat areas	• City of Los Angeles Department of Recreation and Parks
Monitoring Plan	• LACDPW, LADWP, City of Los Angeles Department of Public Works, and ULARA Watermaster

Section 4 – Environmental Setting, Impacts, and Mitigation Measures

The proposed project, Sun Valley Watershed Management Plan, is a long-range plan which provides a blueprint for a multi-purpose flood control program in the project area. The plan consists of multiple components, each designed to manage stormwater runoff and reduce flooding while achieving other project objectives. These objectives are water conservation, improved water quality, increased recreational opportunities and wildlife habitat, improved air quality, and energy conservation. LACDPW has developed four alternatives of the Watershed Management Plan by combining a different subset of the plan components to form each alternative. (See **Section 3 – Project Description.**)

This section analyzes each component individually, the four County-defined Watershed Management Plan alternatives, and the theoretical worst-case alternative for each topic. The worst-case alternative was formed for each environmental topic by combining plan components in a manner that would have the maximum adverse impact with respect to that topic. The following topics are discussed in this section:

4.1	Air Quality	4.7	Hydrology – Water Quality
4.2	Biological Resources	4.8	Noise
4.3	Cultural Resources	4.9	Public Services
4.4	Geology and Soils	4.10	Recreation
4.5	Hazards and Hazardous Materials	4.11	Traffic and Transportation
4.6	Hydrology – Drainage and Flooding	4.12	Utilities and Service Systems

Unless otherwise noted, the criteria for determining significance of impacts have been developed from the State CEQA Guidelines, Appendix G.

4.1 AIR QUALITY

4.1.1 Existing Setting

California is divided geographically into air basins for the purpose of managing the air resources of the State on a regional basis. An air basin generally has similar meteorological and geographic conditions throughout. The project is located within the South Coast Air Basin (SCAB), which is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. It includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties.

4.1.1.1 Meteorology and Climate

The regional climate of the SCAB is classified as Mediterranean, characterized by warm summers and mild winters. Temperatures in the summer reach close to 90° F during the day and can exceed 100° F in some years. During the winter months, temperatures drop to the low 40s in the morning and increase to the high 60s during the day (LACDPW, 1995).

More than 90 percent of the rainfall in the SCAB occurs from November through April. Annual average rainfall varies from approximately 9 inches in Riverside to 14 inches in downtown Los Angeles (SCAQMD, 2002a). Monthly and yearly rainfall totals are extremely variable. Annual average precipitation in the project area (San Fernando Valley) is 17.6 inches (LACDPW, 2002).

Although the climate of the SCAB can be characterized as semi-arid, the air near the land surface is quite moist on most days because of the presence of a marine layer. Humidity restricts visibility in the SCAB, in part since the conversion of sulfur dioxide to sulfates is heightened in air with high relative humidity, such as the marine layer. The annual average relative humidity is 71 percent along the coast, and 59 percent inland (SCAQMD, 2002a).

Due to the generally clear weather, about three-quarters of available sunshine is received in the SCAB, and the remaining one-quarter is absorbed by clouds (SCAQMD, 2002a). The ultraviolet portion of this abundant radiation is a key factor in photochemical reactions that generate smog.

The direction and speed of the wind determine the horizontal dispersion and transport of air pollutants. During the late autumn to early spring rainy season, the SCAB is subjected to wind flows associated with traveling storms moving through the region from the northwest. During the dry season, which coincides with the months of maximum photochemical smog concentrations, the wind flow is typified by a daytime onshore sea breeze and a nighttime offshore drainage wind. Winds in the project area blow primarily from southeast to northwest by day and from northwest to the southeast by night in response to this regional diurnal pattern. Wind speeds in the project area are moderately strong, averaging from 6 to 10 miles per hour, but become light and variable at night (SCAQMD, 2002a).

The Los Angeles region is characterized by persistent temperature inversion in the atmospheric layers near the earth's surface, which limit the vertical mixing of air pollution. Normally, the temperature of the atmosphere decreases with altitude. However, when the temperature of the atmosphere increases with altitude, the phenomenon is termed an inversion. In the SCAB, there are two distinct temperature inversion structures. During the summer, warm, high-pressure descending (subsiding) air is undercut by a shallow layer of cool marine air. The boundary between these two layers of air is a persistent marine subsidence/inversion. A second inversion-type forms on clear, winter nights when cold air off of the mountains sinks to the valley floor while the air aloft over the valley remains warm. This process forms radiation inversions, which trap pollutants such as automobile exhaust near their source, as the pool of cold air drifts seaward. Winter is therefore a period of high levels of primary pollutants along the coastline (SCAQMD, 2002a).

4.1.1.2 Regulatory Setting

Air quality is described by comparing contaminant levels in ambient air samples to national and state standards. These standards are set by the U.S. EPA and the California Air Resources Board (CARB) at levels to protect public heath and welfare with an adequate margin of safety. National Ambient Air Quality Standards (NAAQS) were first authorized by the federal Clean Air Act of 1970. California Ambient Air Quality Standards (CAAQS) were authorized by the state legislature in 1967. These standards are shown in **Table 4.1-1**.

NAAQS (federal) and CAAQS (state) have been established for the following pollutants which are termed "criteria air pollutants": ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter 10 microns in diameter or smaller (PM10), particulate matter 2.5 microns in diameter or smaller (PM2.5), sulfur dioxide (SO_2), and lead. The CAAQS are more stringent than the federal standards for most criteria pollutants. California has also established standards for sulfate, visibility, hydrogen sulfide, and vinyl chloride. Hydrogen sulfide and vinyl chloride are not currently monitored in the SCAB because these contaminants are not seen as significant air quality problems.

Table 4.1-1
National and California Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Standard	California Standard
Ozone (O_3)	1 Hour	0.12 ppm	0.09 ppm
	8 Hour	0.08 ppm*	—
Carbon Monoxide (CO)	8 Hour	9 ppm	9.0 ppm
	1 Hour	35 ppm	20 ppm
Nitrogen Dioxide (NO_2)	AAM	0.053 ppm	—
	1 Hour	—	0.25 ppm
Sulfur Dioxide (SO_2)	AAM	0.030 ppm	—
	24 Hour	0.14 ppm	0.04 ppm
	1 Hour	—	0.25 ppm
Particulate Matter less than 10 microns in diameter (PM10)	24 Hour	150 $\mu g/m^3$	50 $\mu g/m^3$
	AAM	50 $\mu g/m^3$	20 $\mu g/m^3$**
Particulate Matter less than 2.5 microns in diameter (PM2.5)	24 Hour	65 $\mu g/m^3$ *	—
	AAM	15 $\mu g/m^3$ *	12 $\mu g/m^3$**
Sulfates	24 Hour	—	25 $\mu g/m^3$
Lead (Pb)	30 Day	—	1.5 $\mu g/m^3$
	Quarter	1.5 $\mu g/m^3$	—

Source: Federal Standards: EPA, 2003b. State Standards: CARB, 2003.
AAM – annual arithmetic mean

* New federal 8-hour ozone and annual and 24-hour PM2.5 standards were established by EPA in 1997.

** New state standards for PM10 and PM2.5 were approved on June 5, 2003 and became effective July 5, 2003.

The SCAB, including the project area, is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). It is the responsibility of the SCAQMD to ensure that state and federal ambient air quality standards are achieved and maintained within its jurisdiction, which includes SCAB, and the Riverside County portions of the Salton Sea and Mojave Desert Air Basins.

The SCAQMD is required by law to produce plans that show how air quality will be improved. The 1997 revisions to the Air Quality Management Plan (AQMP) prepared by the SCAQMD are designed to satisfy the planning requirements of both the federal and California Clean Air Acts. The AQMP outlines policies and measures to achieve federal and state standards for healthful air quality for all areas under SCAQMD's jurisdiction.

SCAQMD Rule 403(d)(1) prohibits construction activities from generating visible dust in the atmosphere beyond the property line of the emission source. Rule 403(d)(2) requires construction activities conducted in the SCAB to use one or more of the applicable best available control measures (BACM) to minimize fugitive dust emissions from each fugitive dust source type. (The fugitive dust control measures applicable to the proposed project are listed in **Section 4.1.4** below.) In addition, large construction operations must comply with Rule 403(f), which includes requirements to notify SCAQMD and either 1) implement fugitive dust suppression measures specified in Tables 1 and 2 of Rule 403, or 2) prepare a fugitive dust emissions control plan and obtain approval from SCAQMD. Large operations are defined as activities involving greater than 100 acres of disturbed area or daily earth-moving or throughput volume of 10,000 cubic yards three times during the most recent 365-day period.

4.1.1.3 Existing Air Quality

Due to its meteorological and climate characteristics, including light winds, abundant sunlight, and low vertical mixing, the Los Angeles region is conducive to the accumulation of air pollutants. SCAB is a non-attainment area for ozone (extreme), PM10 (serious), and CO (serious) (EPA, 2002b).

Ozone, a photochemical oxidant, is formed when reactive organic compounds and nitrogen oxides, both byproducts of the internal combustion engine, react in the presence of ultraviolet sunlight. High levels of ozone can cause respiratory problems.

PM10 consists of extremely small particles (10 microns or less in diameter) that can lodge in the lungs, contributing to respiratory problems. PM10 arises from sources such as road dust, diesel soot, combustion products, abrasion of tires and brakes, construction operations, and wind storms. It is also formed in the atmosphere from NO_2 and SO_2 reactions with ammonia.

PM2.5 refers to particulate matter that is 2.5 micrometers or smaller in size. Its sources include fuel combustion from automobiles, power plants, wood burning, industrial processes, and diesel powered vehicles. PM2.5 is also formed by chemical reactions in the atmosphere from NO_2 and SO_2, and volatile organic compounds. The health effects of PM2.5 include premature death, respiratory disease, chronic bronchitis, and decreased lung function particularly in children and individuals with asthma. PM2.5 can also cause reduced visibility. The new EPA standards for PM2.5 were established in 1997, but were challenged in court until late 2001. EPA has not designated any attainment or non-attainment areas for PM2.5 at this time.

CO is a colorless and odorless gas which can, in high concentrations, cause physiological and pathological changes sometimes resulting in death by interfering with oxygen transport by the red blood cells. Primary sources of CO are the automobile and other types of motor vehicles.

SCAQMD monitors levels of various criteria pollutants at 33 monitoring stations. Of the 33 monitoring stations, the East San Fernando Valley monitoring station (station number 69) is the most representative of the ambient air quality in the project area.

Table 4.1-2 summarizes air quality monitoring data obtained from the East San Fernando Valley monitoring station. Data are for the years 1998 through 2001 for ozone, CO, SO_2, NO_2, PM10, and PM2.5. Lead and sulfate were not monitored at this station for those years.

Table 4.1-2
Background Air Quality Data for the East San Fernando Valley Station (1998 - 2001)

Pollutant	Number of Days Federal/State Standards Were Exceeded			
	1998	1999	2000	2001
	Federal/State	Federal/State	Federal/State	Federal/State
Carbon Monoxide (CO)	0/0	0/0	0/0	0/0
Ozone (O_3)[1]	7/34	0/13	3/16	2/15
Nitrogen Dioxide (NO_2)	0/0	0/0	0/0	0/0
Sulfur Dioxide (SO_2)	0/0	0/0	0/0	0/0
Particulate Matter less than 10 microns in diameter (PM10)[2]	0/9 (15.3)	0/21 (35)	0/14 (23)	0/14 (23)
Particulate Matter less than 2.5 microns in diameter (PM2.5)[3]	--	1 (1)/*	3 (4.3)/*	4 (3.4)/*
Sulfates	--	--	--	--
Lead (Pb)	--	--	--	--

Source: 2000 and 2001 data from SCAQMD, 2000 and 2001, respectively. 1998 and 1999 data from SCAQMD, 2002b.

-- Pollutant not monitored.

* State standard for PM2.5 did not exist during 1998-2001. The new state standard for PM2.5 took effect in July 2003.

1. Federal 1-hour standard considered.
2. PM10 samples were collected every 6 days. Percentage of days exceeding standard shown in parenthesis.
3. PM2.5 samples collected every 3 days. Percentage of days exceeding standard shown in parenthesis.

These data indicate that the region surrounding the project area, as represented by the East San Fernando Valley monitoring station, was in compliance with both federal and state air quality standards for CO, NO_2, and SO_2 during these years. State ozone and PM10 air quality standards were exceeded at the East San Fernando Valley monitoring station on several days each year.

4.1.2 Significance Criteria

The SCAQMD has developed CEQA significance criteria for project construction and operation. These criteria are published in the CEQA Air Quality Handbook (SCAQMD, 1993). The SCAQMD is preparing a new CEQA guidance document, the Air Quality Analysis Guidance Handbook, but it is not yet available for use. Therefore, the significance criteria for the proposed project are based on the existing CEQA Air Quality Handbook.

Table 4.1-3 and **Table 4.1-4** show the threshold levels of pollutant emissions for construction and operation, respectively, within SCAB as determined by SCAQMD (1993). Project emissions above these threshold levels are deemed significant by SCAQMD.

Table 4.1-3
Construction Emission Thresholds for SCAB

Pollutant	Threshold Level of Emissions	
	Quarterly Basis (tons per quarter)	Daily Basis (pounds per day)
Nitrogen oxides (NO_x)	2.50	100
Reactive organic compounds (ROC)	2.50	75
PM10	6.75	150
Sulfur oxides (SO_x)	6.75	150
CO	24.75	550

Source: SCAQMD, 1993.

Table 4.1-4
Operation Emission Thresholds for SCAB

Pollutant	Threshold Level of Emissions (pounds per day)
Nitrogen oxides (NO_x)	55
Reactive organic compounds (ROC)	55
PM10	150
Sulfur oxides (SO_x)	150
CO	550

Source: SCAQMD, 1993.

The SCAQMD has also defined additional indicators of secondary air quality impacts (per Chapter 6 of 1993 SCAQMD CEQA Air Quality Handbook). These focus on projects that could:

- Interfere with attainment of the federal or state AAQS by either violating or contributing to an existing or projected air quality violation
- Result in population increases in excess of AQMP projections and in other than planned locations for the project's build-out-year
- Generate vehicle trips that cause a CO hotspot
- Create or be subjected to an objectionable odor that could impact sensitive receptors (e.g., long-term health care facilities, rehabilitation centers, convalescent centers, retirement homes, residences, schools, playgrounds, child care centers, and athletic facilities)
- Accidentally release air toxics or acutely hazardous materials posing a threat to public health and safety
- Emit an air toxic contaminant regulated by SCAQMD rules or that is on a federal or state air toxic list

- Involve the burning of hazardous, medical, or municipal waste as waste-to-energy facilities
- Be occupied by sensitive receptors within a quarter mile of an existing facility that emits air toxics identified in SCAQMD Rule 1401 or near CO hot spots
- Emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of 10 in 1 million

4.1.3 Impacts

4.1.3.1 Construction Impacts

Development of specific components of the proposed project would result in air pollutant emissions from construction equipment, earth moving activities, construction workers' commutes and materials deliveries. Air pollutant emissions from construction activities have been estimated for each project component (except Onsite BMPs and Tree Planting and Mulching) by MWH, EIR consultant to LACDPW. Based on the descriptions and sizes of the proposed facilities, MWH staff experienced with construction management have estimated the parameters required for the calculation, including the amount of earthwork, types and number of construction equipment, duration of each phase of construction, and number of construction personnel required. Since detailed construction plans have not been developed for most project components, the estimates were made assuming a "worst case" scenario in terms of air emissions (e.g., compressed construction schedule and maximum acreage of potential site disturbance). Sources of emission factors and equations used in the calculation are the CEQA Handbook (SCAQMD, 1993) for construction equipment tailpipe emissions and PM10 emissions from earth moving activities and EMFAC 2002 Emission Factors for on-road vehicles (SCAQMD, 2003). (EMFAC, short for emission factor, is a computer model used to estimate pollutant emission rates of on-road vehicles.)

The results of the emissions calculations for the proposed project components are summarized in **Tables 4.1-5A** (quarterly and average daily emissions) and **4.1-5B** (peak day emissions). For those project components with construction periods lasting longer than one quarter (i.e., three months or 65 work days), the results for the worst-case quarter are shown. For PM10, the emissions from the following construction-related activities have been added: earth moving (grading, excavation, and filling), construction workers' commutes, use of delivery and work trucks, and construction equipment use. For CO, ROC, NO_x, and SO_x, the emissions from the following construction activities were added: construction workers' commutes, use of delivery and work trucks, and construction equipment use. **Appendix C** contains the detailed data and assumptions used in preparing **Tables 4.1-5A and 4.1-5B**. **Tables C-1** through **C-15** in Appendix C present the calculated emissions of the worst-case quarter for each project component. **Tables C-16** through **C-23** present the emission factors and detailed assumptions (e.g., types and number of construction equipment/vehicles and duration of activity) used with the calculated emissions for the four categories of construction activities (earth moving, construction workers' commutes, use of delivery and work trucks, and construction equipment, respectively).

As shown in **Tables 4.1-5A and 4.1-5B**, construction of the following individual project components would result in exceedance of SCAQMD thresholds for NO_x: Cal Mat Pit, Parking Lot on Sherman, Power Line Easement, Sheldon Pit, Storm Drains, Strathern Pit, Street Storage, and Vulcan Gravel Processing Plant. Construction of Cal Mat Pit project component would exceed the quarterly and daily thresholds for NO_x by approximately 10 percent. Construction of Strathern Pit and Street Storage components would exceed the quarterly threshold for NO_x by approximately 20 percent and the daily threshold for NO_x by approximately 60 percent and 90 percent, respectively. Construction of Parking Lot on Sherman would exceed the quarterly threshold for NO_x by approximately 85 percent and the daily threshold for NO_x by approximately 45 percent. Construction of Power Line Easement and Storm Drains components would exceed the quarterly threshold for NO_x by over 200 percent and the daily threshold for NO_x by approximately 190 percent and 300 percent, respectively. Construction of Sheldon Pit would exceed both the quarterly and daily thresholds for NO_x by 340 percent and 240 percent, respectively. Construction of Vulcan Gravel Processing Plant would exceed the daily threshold for NO_x by approximately 10 percent (peak day emissions).

These project components with estimated emissions that exceed SCAQMD thresholds are large sites, and involve more extensive use of construction equipment than other components. Sheldon Pit, for example, involves a site that is over 80 acres and would require a large number of heavy earth moving equipment in the initial regrading phase (estimated as 11 scrapers and 3 bulldozers over three quarters). The impact of project construction on air quality, while temporary, is significant for these project components on a component-by-component basis.

The other project components individually would not exceed the SCAQMD thresholds. (Air quality impacts by project alternative are discussed further in **Section 4.1.3.4** below.) The Onsite BMPs and Tree Planting and Mulching components are not shown in **Tables 4.1-5A and 4.1-5B**. These two project components are voluntary community involvement programs, which would require only minor construction activities and would result in minimal air emissions.

Table 4.1-5A
Estimated Air Pollutant Emissions from Construction of Project Components
(Quarterly Emissions and Average Daily Emissions)

Project Component	Pollutants									
	CO		ROC		NO_x		SO_x		PM10	
	tons/quarter	avg lbs/day	tons/quarter	avg lbs/day	tons/quarter	avg lbs/day	tons/quarter	avg lbs/day	tons/quarter	avg lbs/day
SCAQMD Construction Emissions Thresholds for SCAB (from Table 4.1-3)	**24.75**	**550**	**2.5**	**75**	**2.5**	**100**	**6.75**	**150**	**6.75**	**150**
Cal Mat Pit	1.71	52	0.5	15	2.7	84	0.22	7	0.57	18
New Park on Wentworth	0.35	39	0.1	9	0.5	55	0.04	5	0.06	6
Parking Lot on Sherman	2.42	74	0.6	18	4.6	142	0.39	12	0.86	27
Power Line Easement	7.45	229	1.4	44	8.8	272	0.76	23	0.50	15
Roscoe Elementary School	0.40	17	0.1	4	0.7	28	0.06	2	0.06	3
Sheldon Pit and Tujunga Wash Transfer	4.54	140	0.9	27	11.1	341	1.59		1.69	52
Stonehurst Elementary School	0.40	17	0.1	4	0.7	28	0.06	2	0.07	3
Stonehurst Park	0.17	16	0.0	4	0.3	24	0.02	2	0.05	5
Storm Drains	5.18	159	1.5	46	9.3	286	0.79	24	2.13	65
Strathern Pit	2.21	68	0.5	16	3.0	92	0.26	8	0.32	10
Street Storage	2.31	71	0.6	17	3.0	94	0.25	8	0.41	13
Sun Valley Middle School	0.97	30	0.2	6	1.2	36	0.10	3	0.06	2
Tuxford Green	1.13	35	0.3	8	1.5	45	0.13	4	0.10	3
Valley Steam Plant	1.01	31	0.3	10	1.4	45	0.17	5	0.28	9
Vulcan Gravel Processing Plant	1.32	41	0.4	12	2.1	64	0.17	5	0.29	9

7.3 Estimated emissions which exceed SCAQMD construction emission thresholds for SCAB

avg lbs/day: Average pounds per day
tons/quarter: Tons per quarter (one quarter = three months = 65 work days)

Table 4.1-5B
Estimated Peak Day Air Pollutant Emissions from Project Construction

Project Component	Pollutants (pounds per day)				
	CO	ROC	NO_x	SO_x	PM10
SCAQMD Construction Emissions Thresholds for SCAB Threshold (from Table 4.1-3)	**550**	**75**	**100**	**150**	**150**
Cal Mat Pit	66	18	110	9	19
New Park on Wentworth	56	12	78	7	7
Parking Lot on Sherman	77	15	146	12	26
Power Line Easement	247	44	289	25	17
Roscoe Elementary School	29	10	68	6	4
Sheldon Pit	143	31	341	49	52
Stonehurst Elementary School	29	10	68	6	4
Stonehurst Park	22	6	37	3	6
Storm Drains	220	51	399	35	18
Strathern Pit	113	27	161	14	14
Street Storage	129	27	193	16	12
Sun Valley Middle School	65	12	80	7	4
Tuxford Green	63	10	71	6	4
Valley Steam Plant	49	16	74	6	8
Vulcan Gravel Processing Plant	66	18	110	9	12

7.3 Estimated emissions which exceed SCAQMD construction emission thresholds for SCAB

Peak day defined as the day where operation of equipment with the highest emissions is predicted.

As shown in **Tables 4.1-5A and 4.1-5B**, implementation of the project would result in less-than-significant PM10 emissions on a component-by-component basis. **Mitigation Measures A-1** through **A-10** (fugitive dust suppression) (see **Section 4.1.4**) will be implemented during project construction to further reduce PM10 emissions associated with earth moving activities. Typical fugitive-dust suppression techniques, such as those contained in these mitigation measures, can reduce dust generation by 60 to 90 percent if implemented consistently (Midwest Research Institute 1996, as cited in City of Glendale, 2002).

Mitigation Measures A-11, A-12, and A-13 will be implemented during construction of all project components in order to reduce tailpipe emissions (including CO, ROC, NO_x, SO_x, and PM10) from worker commutes, use of delivery and work trucks, and use of construction equipment. However, **Mitigation Measures A-11, A-12, and A-13** are limited in their effectiveness to reduce tailpipe emissions.

To further reduce tailpipe emissions, implementation of **Mitigation Measure A-14** will be considered at the time of construction of individual project components. The majority of the construction emissions, particularly for NO_x, are associated with tailpipe emissions from diesel-fueled construction equipment. Using construction equipment with alternative fuel(s) (Mitigation Measure A-14) can achieve high reduction efficiency for tailpipe emissions. The approximate NO_x emissions reduction rates of various alternative fuels are: 60 percent for compressed natural gas (CNG), 10 percent for emulsified diesel fuel, and 2 to 10 percent for biodiesel fuel (EPA, 2003c). However, use of construction equipment with alternative fuel(s), while effective, may not be applicable to all project components. Some of the proposed project components are expected to require a large number of heavy construction equipment. Limited equipment availability and high costs may make it infeasible to use a large fleet of construction equipment with alternative fuel(s).

For Cal Mat Pit, Parking Lot on Sherman, Power Line Easement, Sheldon Pit, Storm Drains, Strathern Pit, Street Storage, and Vulcan Gravel Processing Plant, NO_x emissions during construction are considered significant and unmitigable impacts since the implementation of **Mitigation Measures A-11, A-12, and A-13** may not sufficiently reduce emissions, and implementation of **Mitigation Measure A-14** may be infeasible. (Air quality impacts by project alternative are discussed further in **Section 4.1.3.4**.)

Construction Impacts on Sensitive Receptors. Schools are considered sensitive receptors to air pollution. Three project components (i.e., Sun Valley Middle School, Roscoe Elementary School, and Stonehurst Elementary School) are located on school sites. Construction emissions would result in temporary degradation of ambient air quality at the schools. Because construction emissions associated with these project components are temporary and well below the SCAQMD thresholds, this is considered a less than significant impact on sensitive receptors. **Mitigation Measures A-1** through **A-14** would further reduce this impact.

4.1.3.2 Operational Impacts

Operation and Maintenance of Proposed Facilities. Operation and maintenance of specific facilities included as part of the Watershed Management Plan are expected to have minimal adverse impact on air quality. **Table 4.1-6A** summarizes potential impacts.

Table 4.1-6A
Potential Air Quality Impacts from Project Operation

Potential Air Quality Impact by Project Component	Impact Significance
All Project Components	
Maintenance requirements of proposed facilities include sediment removal from retention facilities, separation systems, and catch basins, landscaping, maintenance of equipment such as pumps, and inspections. Each of these maintenance activities would require several personnel several times a year at each site, requiring minor vehicle and employee travel. Sediment removal from retention basins may require minor earthwork. Several project components require operation of pumps, which are expected to be electric-powered. These activities would result in minor vehicle and equipment tailpipe emissions. Dust emissions related to earthwork may occur, but sediment removal from project facilities would likely occur under moist conditions.	Less than significant
Inert Landfill Operations	
Implementation of the project (all alternatives) would require discontinuation of the operation of Strathern Pit as an inert landfill. This would eliminate the existing air emissions associated with the vehicle trips for hauling waste to Strathern Pit, a beneficial impact on air quality. As described in Section 3.4.1.1, the Cal Mat Pit project component site is located within a 90-acre site, a portion of which is currently operated as an inert landfill. The Cal Mat Pit project component proposes to use the approximately 30-acre area on the northeastern corner of the site, which is separated by a berm from the active landfill operations in the southern portion of the pit. Implementation of the Cal Mat Pit project component (Alternatives 3 and 4) includes operation of the project site as an inert landfill during the interim phase of the project, which would be a continuation of the existing landfill operation ongoing in the southern portion of Cal Mat Pit. Operation of the landfill as part of this project component would result in continuation of the vehicle trips to the existing landfill and associated emissions. However, an increase in vehicle trips to the landfill based on development of the Watershed Management Plan component at this site is not known at this time. Additional review of operational air quality impacts for Cal Mat Pit will be conducted as part of project-level CEQA review.	Less than significant
Tree Planting	
Increase in the number of trees in the project area would have direct and indirect beneficial effects on local and regional air quality. Direct effects include reduction of carbon dioxide (absorption by leaves), ozone (reduced formation from reduction in ambient temperature), and PM10 (adsorption to leaves). Indirectly, shading effects of trees reduce the energy need for heating and cooling of structures, which in turn decreases the need for energy generation and the associated power plant emissions (Jones and Stokes, 1998). A discussion of project benefits on air quality expected from the Tree Planting component is presented in Technical Memorandum No. 5 (see **Section 2.9** for availability of related documents).	Beneficial impact
Mulching	
The mulching program would reduce the amount of solid waste being transported to landfills by promoting reuse of green waste at the sites of generation. This would result in a decrease in the number of truck trips for transporting waste and associated tailpipe emissions.	Beneficial impact

The following project components include operation of recreational facilities, such as parks, which would result in air emissions from vehicle trips generated by visitors: Cal Mat Pit, New Park on Wentworth, Power Line Easement, Sheldon Pit, Strathern Pit, and Tuxford Green. Traffic generated by visitors to the proposed recreational facilities was estimated based on trip rates from the Institute of Transportation Engineers *Trip Generation* manual (1997) for the County Park land use category (2.28 vehicle trips per acre).

Based on the above assumptions, the estimated daily vehicle trips generated as a result of operation of the proposed recreational facilities are:

- Cal Mat Pit – 68 trips
- New Park on Wentworth – 7 trips
- Power Line Easement – 66 trips
- Sheldon Pit – 119 trips
- Strathern Pit – 41 trips
- Tuxford Green – 2 trips

Air emissions from the estimated vehicle trips by visitors to the proposed recreational facilities were calculated using the EMFAC 2002 Emission Factors for passenger vehicles (SCAQMD, 2003; see Table C-17 in Appendix C for values). It was assumed that the length of each vehicle trip is 14 miles (round trip) on average (based on Table A9-5-D; SCAQMD, 1993). The results of the calculations (**Table 4.1-6B**) show that the vehicle trips generated by visitors to the proposed recreational facilities would result in less-than-significant air emissions, both on a site-by-site basis and cumulatively for all project component sites with new parks.

Table 4.1-6B
Estimated Air Pollutant Emissions from Recreational Visitors to Proposed Parks

Project Components with Proposed Parks	Pollutants (pounds per day)				
	CO	ROC	NO_x	SO_x	PM10
SCAQMD Operation Emissions Thresholds for SCAB (from Table 4.1-4)	**550**	**55**	**55**	**150**	**150**
Cal Mat Pit	17	2	2	0.01	0.11
New Park on Wentworth	2	0.2	0.2	<0.01	0.01
Power Line Easement	17	2	2	0.01	0.10
Sheldon Pit	30	3	3	0.02	0.19
Strathern Pit	10	1	1	0.01	0.06
Tuxford Green	1	0.1	0.1	<0.01	<0.01
Total	**77**	**9**	**8**	**0.04**	**0.48**

4.1.3.3 Other Air Quality Impact Considerations

Consistency with an Air Quality Management Plan. The applicable air quality plan for the project area is the AQMP developed by SCAQMD. A project is deemed inconsistent with the applicable air quality plan if it would result in population and/or employment growth that exceeds growth estimated in the applicable air quality plan. The project does not include development of housing or employment centers, and would not induce population or employment growth. Therefore, the project would not conflict with or obstruct the implementation of the applicable air quality plan.

Odor. Surface retention basins and other facilities that have standing water for a period of time may create odors if improperly operated and maintained. Algae blooms and their eventual die-off can create objectionable odors. **Table 4.1-7** identifies project components that include aboveground facilities designed to temporarily or permanently retain stormwater, and describes the potential for those project components to create odor. It is anticipated that the City of Los Angeles Department of Parks and Recreation would be responsible for maintaining lakes and other water features at proposed parks, including odor/algae control. The odor control methods would be similar to the City's existing practices for these types of facilities (e.g., aeration and circulation). Since all project facilities have very low to low potential for creating odors, this is a less-than-significant impact.

Table 4.1-7
Potential for Creating Odor by Project Component

Type of Facility	Relevant Project Components	Potential for Creating Odor
Permanent lakes	Cal Mat Pit (Phase II) Strathern Pit	Low Lakes proposed as part of new parks would be managed (by providing circulation, aeration, etc.) as necessary to maintain the aesthetics of the park.
Surface retention/infiltration basins	Cal Mat Pit (Phase I and Interim Phase) Power Line Easement Valley Steam Plant Vulcan Gravel Processing Plant	Very Low Standing water may be present for several months after large storms (e.g. a 50-year frequency storm); however, the potential for algae blooms is limited since water would be present mostly during the colder months.
Wetlands	Sheldon Pit Strathern Pit	Very Low Water in the wetlands will not be stagnant because it will be continuously circulated (and therefore aerated) using pumps.
Shallow depressions for infiltrating stormwater	New Park on Wentworth Roscoe Elementary School Stonehurst Elementary School Stonehurst Park Sun Valley Middle School	Very low Stormwater is expected to completely infiltrate into the ground within several days of any storm event.

Emission of Toxic Air Contaminants. Aside from construction equipment and vehicle fuels, the project does not involve use of hazardous materials that could result in release of carcinogenic or toxic air contaminants. No significant impacts would occur.

4.1.3.4 Impact by Alternative

As described above, project-related adverse impacts on air quality are related to construction activities. Therefore, the theoretical worst-case alternative for air quality is defined as the alternative that would involve the maximum amount of construction, i.e. all proposed project components.

As discussed in Section 4.1.3.1, construction of the following project components would result in significant impacts on air quality: Cal Mat Pit, Parking Lot on Sherman, Power Line Easement, Sheldon Pit, Storm Drains, Strathern Pit, Street Storage, and Vulcan Gravel Processing Plant. The other project components would not exceed the SCAQMD thresholds.

Various project components of the Watershed Management Plan will be implemented over approximately 10 years. Due to the relatively short construction period at some of the project component sites, the need for site acquisition, varying project financing mechanisms and their effect on the planning and implementation schedules, and different time horizons for obtaining various permits and approvals, the construction periods of the proposed project components are not anticipated to overlap.

Overall, among the four County-defined alternatives, Alternative 2 is expected to have the greatest air quality impacts since it involves the most project components with significant construction emissions, including Sheldon Pit. Alternative 1 is expected to have the least air quality impacts since it consists of project components that are smaller in scale and involve less construction activities (i.e., does not include Cal Mat Pit or Sheldon Pit).

4.1.4 Mitigation Measures

Construction Impacts

The following measures will be implemented during construction of all project components to reduce fugitive dust emissions:

A-1 Clean dirt from construction vehicle tires and undercarriages when leaving the construction site and before entering local roadways.

A-2 During earth-moving activities, water the construction area as necessary, but at least twice per day.

A-3 Water temporary open storage piles once per hour or install temporary covers.

A-4 Water unpaved roadways three times per day or apply non-toxic soil stabilizers.

A-5 Limit construction vehicle speed on the project site to 15 miles per hour (mph) or less.

A-6 Cover dirt in trucks during on-road hauling.

A-7 Cease earth-moving activities on days when wind gusts exceed 25 mph or apply water to soil not more than 15 minutes prior to moving such soil.

A-8 Sweep streets near the construction area at the end of the day if visible soil material is present.

A-9 For applicable construction areas, establish a vegetative groundcover as soon as feasible after active operations have ceased. Groundcover will be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting.

Based on the site acreage and amount of earthwork involved, the following project components may require implementation of the following mitigation measure per SCAQMD Rule 403: Sheldon Pit, Cal Mat Pit, and Strathern Pit.

A-10 Per SCAQMD Rule 403(f), large construction operations (greater than 100 acres of disturbed area or daily earth-moving or throughput volume of 10,000 cubic yards three times during the most recent 365-day period) will either 1) implement fugitive dust suppression measures as specified in Tables 1 and 2 of Rule 403, or 2) prepare a fugitive dust emissions control plan and obtain approval from SCAQMD.

The following measures will be implemented to reduce tailpipe emissions from construction equipment and vehicles, including NO_X:

A-11 Prohibit all vehicles from idling in excess of 10 minutes, both on and off-site.

A-12 Maintain construction equipment in proper tune.

A-13 Encourage contractors to establish trip reduction plans. The goal of these plans will be to achieve a 1.5 average vehicle ridership (AVR) for construction employees.

In order to further reduce tailpipe emissions from construction equipment, implementation of the following measure will be considered at the time of construction of individual project components.

A-14 Select construction equipment with low pollutant emissions and high energy efficiency. Factors to consider include model year and alternative fuels (e.g., compressed natural gas, biodiesel, emulsified diesel, methanol, propane, butane, and low sulfur diesel).

Operational Impacts. None required.

4.1.5 Future Analyses

None required.

4.2 BIOLOGICAL RESOURCES

4.2.1 Methodology and Approach

Biological resources in the project area were evaluated by BonTerra Consulting, Costa Mesa, California. The technical report prepared by BonTerra Consulting (2003) is included in **Appendix D**. The evaluation included a review of available literature and records and field surveys of individual project component sites.

Relevant literature was reviewed prior to the initiation of field surveys to determine the special status plant and wildlife species that are known or have the potential to occur in the project area. The following literature sources were reviewed:

- Special status species lists published by the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG)
- CDFG Natural Diversity Database (CNDDB) (CDFG 2002 and 2003) for the Burbank, San Fernando, Sunland, and Van Nuys USGS quad maps
- California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS 2002 and 2003) for the Burbank, San Fernando, Sunland, and Van Nuys USGS quad maps
- Compendia, journal articles, collection summaries, and other general publications on plant and wildlife species relevant to the project area (Abrams, 1923; Abrams, 1960; Atwood, 1990; Fisher and Case, 1997; Garrett and Dunn, 1981; Hickman, 1993; Holland, 1991; Ingles, 1965; Jameson and Peters, 1988; Jennings and Hayes, 1994; Munz, 1974; Peterson, 1990; Rey, 1994; Small, 1994; Stebbins, 1985; Stephenson and Calcarone, 1999; Swift, 1993; Udvardy, 1988; and USFWS, 1999)

General plant and wildlife surveys of the project area were conducted in July and August 2002, and February and April 2003. Plant species were identified in the field or collected for later identification. During the surveys, each habitat type was evaluated for its potential to support common species known or are expected to occur in the region. Active searches for reptiles and amphibians were accomplished by systematic surveys through appropriate habitat, including lifting, overturning, and carefully replacing rocks and debris. Birds were identified by visual and auditory recognition. Surveys for mammals were conducted during the day and included searching for and identifying diagnostic signs (e.g., scat, footprints, scratch-outs, dust bowls, burrows, and trails). During the surveys, the project sites were also evaluated for their potential to support special status plant and wildlife species that are known or are expected to occur in the region. No focused plant or wildlife surveys were conducted during these site visits.

Field surveys of Cal Mat Pit, Sheldon Pit, Strathern Pit, and Vulcan Gravel Processing Plant were conducted only from the fence line using binoculars, because on-site access could not be obtained from the property owners. Coordination with property owners included meetings on May 13, 2002. Subsequent to these meetings, requests were made to access the sites. Access to Cal Mat Pit and Sheldon Pit (and Boulevard Pit, which is referenced in Section 7) was denied by Vulcan Materials Company (letter from M. Drennan, MWH, to D. Sprague, Vulcan Materials

Company dated August 29, 2002; letter from D. Sprague, to M. Drennan, dated September 5, 2002; V. Bapna, LACDPW, telecon with D. Sprague, April 8, 2004). Access to Strathern Pit was denied by Los Angeles By-Products Company (letter from J. Galizio, BonTerra Consulting to R. McAllister, Los Angeles By-Products Company dated October 8, 2003; telecon with R. McAllister, October 16, 2003; letter from J. Galizio to R. McAllister dated October 16, 2003). Site access to these properties will be obtained and/or the sites will be purchased by LACDPW prior to detailed design of the proposed Watershed Management Plan components.

The storm drains and the street storage facilities proposed under the project would be constructed underground within existing paved roadways, and therefore are not expected to impact biological resources. The Onsite BMPs and Tree Planting and Mulching components are proposed as voluntary community involvement programs. Therefore, the locations of these components cannot be determined at this time. Project sites for Onsite BMPs and Tree Planting and Mulching would consist of existing businesses and residences in the project area. Since these sites have most likely been disturbed by previous development, these two project components are not expected to have any substantial impact on biological resources. The Sheldon Pit project component includes modification of Tujunga Wash to construct a structure for diverting flood flows into the proposed retention basins at Sheldon Pit. The existing channel of Tujunga Wash is lined with concrete for flood control purposes, and contains very limited biological resources. Therefore, the proposed modification of the channel would not have any substantial impact on biological resources.

4.2.2 Existing Setting

In general, the project area has been almost completely urbanized for decades. Virtually all of the native vegetation types that historically occurred throughout the area have been converted to other uses by development. While residential and commercial/retail land uses have eliminated the potential for native vegetation types to be reestablished in these developed areas, existing land uses such as commercial/recreational (e.g., golf courses and parks) and industrial (e.g., gravel pits) may support relict stands of native habitat.

Vegetation types, wildlife populations, and wildlife movement patterns that are either known or have the potential to occur in the project area are discussed below. Special status vegetation types and special status plant and wildlife species are discussed in **Section 4.2.4**.

4.2.2.1 Vegetation Types

Urbanization in the project area has impacted native vegetation types such that the majority of the vegetated area within the project component sites may be described as ruderal or developed land. However, approximately 1.5 acres of coastal sage scrub were observed at New Park on Wentworth during the field survey. The site appears to have been disturbed from vehicles and foot traffic. In addition, the four sites to which access was not granted (i.e., Vulcan Gravel Processing Plant, Cal Mat Pit, Sheldon Pit, and Strathern Pit) have the potential to support native vegetation such as Riversidean alluvial sage scrub, coastal sage scrub, mule fat scrub, and willow scrub. This evaluation was made based on assessment of aerial photographs and surveys from off-site, adjacent areas.

Table 4.2-1 summarizes the vegetation types that were observed or have the potential to occur on each project component site. A description of each vegetation type is included in the biological resources technical report (**Appendix D)**.

Table 4.2-1
Vegetation Types Observed or Potentially Present at Project Component Sites

Vegetation Types*	Cal Mat Pit	New Park on Wentworth	Onsite BMPs	Parking Lot on Sherman	Power Line Easement	Roscoe Elementary School	Sheldon Pit	Stonehurst Elementary School	Stonehurst Park	Storm Drains	Strathern Pit	Street Storage	Sun Valley Middle School	Tree Planting and Mulching	Tuxford Green	Valley Steam Plant	Vulcan Gravel Processing Plant
Riversidean Alluvial Fan Sage Scrub	P	--	--	--	--	--	P	--	--	--	P	--	--	--	--	--	P
Coastal Sage Scrub	P	X	--	--	--	--	P	--	--	--	P	--	--	--	--	--	P
Non-Native Grassland	X	--	--	--	X	--	X	--	--	--	X	--	--	--	X	--	X
Ruderal	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Developed	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Southern Willow Scrub	P	--	--	--	--	--	P	--	--	--	P	--	--	--	--	--	P
Mule Fat Scrub	P	--	--	--	--	--	P	--	--	--	P	--	--	--	--	--	P

Key: **X** = Observed during field surveys
P = Potentially observed as interpolated from off-site analysis and aerial photographs
-- = Not Observed

* Vegetation types definitions per Holland (1986) and Sawyer and Keeler-Wolf (1995)

4.2.2.2 Common Wildlife

Wildlife species expected to occur at individual project component sites under existing conditions are described below. Potential for presence was determined based on known occurrences of these species in the project area or the presence of suitable habitat. Project components with some potential for wildlife to occur include New Park on Wentworth, Cal Mat Pit, Sheldon Pit, Strathern Pit, Vulcan Gravel Processing Plant, Sun Valley Middle School, Roscoe Elementary School, Stonehurst Elementary School, and Stonehurst Park.

Fish. Freshwater fish were not observed during field reconnaissance. Mosquito fish (*Gambusia affinis*) is a non-native fish species that is known to occur in the project area. Mosquito fish may be present in standing water areas, if any, within the gravel pits. For example, a portion of Sheldon Pit has exposed groundwater year-round and may provide suitable habitat for mosquito fish.

Amphibians. Though no amphibians were observed during the field reconnaissance, habitat observed or potentially present from interpolation of other habitat data within the Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit has the potential to support amphibians. Common native amphibian species expected to occur in the project area at these sites include the western toad (*Bufo boreas*), Pacific treefrog (*Hyla regilla*), and California treefrog (*Hyla cadaverina*). Non-native amphibian species expected to occur in the project area and potentially present at these sites include the bullfrog (*Rana catesbeiana*).

Reptiles. Reptile species observed or expected to occur within the project area include the side blotched lizard (*Uta stansburiana*), western fence lizard (*Sceloporus occidentalis*), southern alligator lizard (*Elgaria multicarinatus*), coastal western whiptail (*Cnemidophorus tigris tigris*), coachwhip (*Masticophis flagellum*), south coast garter snake (*Thamnophis sirtalis* spp.), common kingsnake (*Lampropeltis getulus*), and Southern Pacific rattlesnake (*Crotalus viridis heleri*). Habitat observed or interpolated to have potential to support these species occurs on the New Park on Wentworth, Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit. The lizard species (only) have the potential to occur at Tuxford Green, Sun Valley Middle School, Stonehurst Park, Stonehurst Elementary School, and Roscoe Elementary School.

Birds. Resident bird species observed to occur in the project area include the turkey vulture (*Cathartes aura*), mallard (*Anas platyrhynchos*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), killdeer (*Charadrius vociferous*), barn owl (*Tyto alba*), Anna's hummingbird (*Calypte anna*), black phoebe (*Sayornis nigricans*), western scrub-jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), bushtit (*Psaltriparus minimus*), house wren (*Troglodyes aedon*), northern mockingbird (*Mimus polyglottos*), Brewer's blackbird (*Euphagus cyanocephalus*), brown-headed cowbird (*Molothrus ater*), and house finch (*Carpodacus mexicanus*). Habitat observed or interpolated to have potential to provide nesting, foraging or roosting habitat for these species occurs on the New Park on Wentworth, Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, Strathern Pit, Tuxford Green, Sun Valley Middle School, Stonehurst Park, Stonehurst Elementary School, and Roscoe Elementary School.

Mammals. Common small mammal species observed or expected to occur in the project area include the desert cottontail (*Sylvilagus audubonii*), California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), California vole (*Microtus californicus*), house mouse (*Mus musculus*), California mouse (*Peromyscus californicus*), deer mouse (*Peromyscus maniculatus*), and black rat (*Rattus rattus*). Habitat observed (or interpolated) to have potential to support these species occurs on the New Park on Wentworth, Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit. The potential for suitable habitat for these species is lower at Tuxford Green, Sun Valley Middle School, Stonehurst Park, Stonehurst Elementary School, and Roscoe Elementary School.

Common bat species expected to occur in the project area include the big brown bat (*Eptesicus fuscus*), hoary bat (*Lasiurus cinereus*), California myotis (*Myotis californicus*), western pipistrelle (*Pipistrellus hesperus*), and Brazilian free-tailed bat (*Tadarida brasiliensis*). The surface water at Vulcan Gravel Processing Plant, Sheldon Pit, CalMat Pit, and Strathern Pit has the potential to support insects that would provide forage for the various bat species.

Larger mammal species expected to occur in the watershed include the Virginia opossum (*Didelphis virginiana*), coyote (*Canis latrans*), common raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*). Habitat observed (or interpolated) to support these species occurs on the New Park on Wentworth, Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit. The following sites have a lower potential to provide habitat for these species: Tuxford Green, Sun Valley Middle School, Stonehurst Park, Stonehurst Elementary School, and Roscoe Elementary School.

4.2.2.3 Wildlife Movement

Wildlife corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated "islands" of wildlife habitat. Various studies have concluded that some wildlife species, especially the larger and more mobile mammals, will not likely persist over time in fragmented or isolated habitat areas because they prohibit the infusion of new individuals and genetic information (MacArthur and Wilson, 1967; Soule, 1987; Harris and Gallagher, 1989; Bennett, 1990).

Wildlife corridors mitigate the effects of habitat fragmentation by: 1) allowing animals to move between remaining vegetation types, thereby permitting depleted populations to be replenished and promoting genetic exchange; 2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events will result in population or local species extinction; and 3) serving as travel routes for individual animals as they move in their home ranges in search of food, water, mates, and other needs (Noss, 1983; Farhig and Merriam, 1985; Simberloff and Cox, 1987; Harris and Gallagher, 1989).

Currently, none of the project component sites provides a functional connection between two or more habitat patches that would otherwise be fragmented or isolated from one another.

4.2.3 Regulatory Framework

Biological resources within the project area are governed by several regulatory agencies and applicable statutes and guidelines, as summarized in **Table 4.2-2**. Additional information on the regulatory framework for biological resources protection and management is provided in the biological resources technical report (**Appendix D**).

Table 4.2-2
Statutes, Guidelines, and Agencies Governing Biological Resources in the Project Area

Agencies • Statutes and Guidelines	Responsibilities
U.S. Fish and Wildlife Service (USFWS)	
• Federal Endangered Species Act (FESA)	Issuance of permits for incidental take* of federally listed endangered or threatened species
• Migratory Bird Treaty Act (MBTA)	Issuance of permits for incidental take** of migratory bird or part, nest, or egg of species listed in wildlife protection treaties between the United States, Great Britain, Mexico, Japan, and the countries of the former Soviet Union
California Department of Fish and Game (CDFG)	
• California Endangered Species Act (CESA)	Authorization to take* state listed endangered or threatened species
• California Fish and Game Code Section 1602	Authorization of activities that modify a river, stream, or lake
• California Fish and Game Code Sections 3503, 3503.5 and 3513	Prohibition of take** of all birds and their active nests including raptors and other migratory birds (as listed under MBTA)
U.S. Army Corps of Engineers (USACE)	
• Federal Clean Water Action (CWA) Section 404	Issuance of permits for discharges of dredged and fill material into surface waters of the United States, including wetlands

* "Take" of an endangered or threatened species is broadly defined to cover harassing, harming, killing, capturing, or collecting.
** "Take" under the MBTA is defined below in Section 4.2.6.1.

4.2.4 Special Status Species and Habitat Types

4.2.4.1 Special Status Plant Species

Fifteen special status plant species have been previously identified by CNDDB and CNPS in the project region, or have some potential to occur within the project area. None of these species was directly observed during the field surveys. Special status plant species include state and federally listed endangered and threatened species, federal and state species of concern and candidate species, and species listed in the CNPS rare plant inventory.

A qualitative scale (ranging from none, very limited, limited, low, moderate, to high) was used to describe the potential for special status plant species to occur on the project component sites.

Only New Park on Wentworth, Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit were identified as having limited to low potential for special status plant species to occur. At all other project component sites, no special status plant species are expected to occur due to lack of appropriate habitat and/or substrate. Descriptions of special status plant species are included in the biological resources technical report (**Appendix D**). **Table 4.2-3** lists the fifteen species and their potential to occur at the project component sites.

Table 4.2-3
Special Status Plant Species with Potential to Occur at Project Component Sites

Species	Status: Federal / State	Status: CNPS	Project Sites with Potential Occurrence
Greata's aster *Aster greatea*	--/--	1B	None
Braunton's milk vetch *Astragalus brauntonii*	FE/CE	1B	None
Parish's brittlescale *Atriplex parishii*	--/--	1B	None
Nevin's barberry *Berberis nevinii*	FE/CE	1B	Low potential at Vulcan Gravel Processing Plant, New Park on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit
Plummer's mariposa lily *Calochortus plummerae*	--/--	1B	
Lewis' evening primrose *Camissonia lewisii*	--/--	3	
Southern tarplant *Centromadia parryi* ssp. *australis*	--/--	1B	Limited potential at Vulcan Gravel Processing Plant, New Park on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit
San Fernando Valley spineflower *Chorizanthe parryi* var. *fernandina*	FC/CE	1B	
Slender-horned spineflower *Dodecahema leptocerus*	FE/CE	1B	
Many-stemmed dudleya *Dudleya multicaulis*	--/--	1B	None
Los Angeles sunflower *Helianthus nuttallii* ssp. *parishii*	--/SC	1B	Limited potential at Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit
Mesa horkelia *Horkelia cuneata* ssp. *puberula*	--/--	1B	Low potential at Vulcan Gravel Processing Plant, New Park on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit
San Gabriel linanthus *Linanthus concinnus*	--/--	1B	None
Davidson's bush mallow *Malacothamnus davidsonii*	--/--	1B	Low potential at Vulcan Gravel Processing Plant, New Park on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit
California orcutt grass *Ocuttia californica*	FE/CE	1B	None

Federal (USFWS)
FE Endangered
FT Threatened
PE Proposed Endangered
PT Proposed Threatened
SOC Species of Concern[1]
FC Federal Candidate

State (CDFG)
CE Endangered
CT Threatened
PE Proposed Endangered
PT Proposed Threatened
SSC Species of Special Concern
SC State Candidate

[1] This designation, although no longer a formal status, is still used by USFWS for informational purposes.

California Native Plant Society (CNPS)
1A Plants Presumed Extinct in California
1B Plants Rare, Threatened, or Endangered in California and Elsewhere
2 Plants Rare, Threatened, or Endangered in California but More Common Elsewhere
3 Plants about which We Need More Information – A Review List
4 Plants of Limited Distribution – A Watch List

Project Sites with Potential Occurrence
A qualitative scale (ranging from none, very limited, limited, low, moderate, to high) was used to describe the potential for special status wildlife species to occur on the project component sites.

4.2.4.2 Special Status Wildlife Species

Thirteen special status wildlife species have been previously recorded as having occurred within the project area. None of these species was observed during the field surveys.

A qualitative scale (ranging from none, very limited, limited, low, moderate, to high) was used to describe the potential for special status wildlife species to occur on the project component sites. Only the project component sites, only New Park on Wentworth, Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit were identified as having limited to low potential for special status wildlife species to occur. At all other project component sites, no special status wildlife species are expected to occur due to lack of appropriate habitat. **Table 4.2-4** lists the thirteen species and their potential to occur on the project component sites; however, the table does not include information on birds protected by the federal Migratory Bird Treaty Act.

Table 4.2-4
Special Status Wildlife Species with Potential to Occur on Project Component Sites

Species	Status		Project Sites with Potential Occurrence
	Federal	State	
Fish			
Santa Ana speckled dace *Rhinichthys osculus ssp.*	None	SSC	None
Santa Ana sucker *Catostomus santaanae*	FT	SSC	None
Amphibians			
Arroyo toad *Bufo californicus*	FE	SSC	None
Western spadefoot toad *Scaphiopus hammondi*	SOC	SSC	None
Mountain yellow-legged frog *Rana muscosa*	FE[1]	SSC	None
Reptiles			
Silvery legless lizard *Anniella pulchra pulchra*	SOC	SSC	Limited potential at Vulcan Gravel Processing Plant, New Park on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit
Orange-throated whiptail *Cnemidophorus hyperythrus beldingi*	None	SSC	Low potential at Vulcan Gravel Processing Plant, New Park on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit
San Diego coast horned lizard *Phrynosoma coronatum blainvillei*	SOC	SSC	
Western pond turtle *Clemmys marmorata*	SOC	SSC	Limited potential at Sheldon Pit or other standing water areas within gravel pits (if any)
Birds			
Yellow-billed cuckoo *Coccyzus americanus occidentalis*	None	SE	None
Coastal California gnatcatcher *Polioptila californica californica*	FT	SSC	Very limited potential at New Park on Wentworth. Limited potential at Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit.
Least Bell's vireo *Vireo bellii pusillus*	FE	SE	Low potential at Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit
Mammals			
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	None	SSC	Very limited potential at New Park on Wentworth. Limited potential at Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit.

Federal (USFWS)
- FE Endangered
- FT Threatened
- PE Proposed Endangered
- PT Proposed Threatened
- C Candidate Species
- SOC Species of Concern[2]

State (CDFG)
- SE Endangered
- ST Threatened
- PE Proposed Endangered
- PT Proposed Threatened
- SSC Species of Special Concern
- FP Fully Protected

[1] Southern California populations only
[2] This designation, although no longer a formal status, is still used by USFWS for informational purposes.

Project Sites with Potential Occurrence
A qualitative scale (ranging from none, very limited, limited, low, moderate, to high) was used to describe the potential for special status plant species to occur on the project component sites.

4.2.4.3 Special Status Vegetation Types

In addition to providing an inventory of special status plant and wildlife species, the CNDDB also provides an inventory of vegetation types that are considered special status by state and federal resource agencies, academic institutions, and various conservation groups such as CNPS. Determination of the level of sensitivity is based on the Nature Conservancy Heritage Program Status Ranks, which rank both species and vegetation types on a global and statewide basis according to the number and size of remaining occurrences and recognized threats (e.g., proposed developments, habitat degradation, and invasion by non-native species).

Among the project component sites, Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit were interpolated, based on reviews of aerial photographs, to have the potential for special status vegetation types to occur. At all other project component sites, special status vegetation types were not observed during the field surveys and are not expected to occur. Special status vegetation types with potential to occur in the project area are described in the biological resources technical report (**Appendix D**) and listed in **Table 4.2-5**.

Table 4.2-5
CNDDB Special Status Vegetation Types with Potential to Occur within Project Component Sites

Special Status Vegetation Types	Project Sites with Potential Occurrence
Riversidean Alluvial Fan Sage Scrub	Vulcan Gravel Processing Plant*, Sheldon Pit*, Cal Mat Pit*, and Strathern Pit*
South Coast Live Oak Riparian Forest	None
Southern Cottonwood-Willow Riparian Forest	Vulcan Gravel Processing Plant*, Sheldon Pit*, Cal Mat Pit*, and Strathern Pit*
Southern Sycamore-Alder Riparian Woodland	None
California Walnut Woodland	None

* Interpolated to be potentially present from reviews of aerial photographs

4.2.5 Significance Criteria

Project impacts on biological resources are considered significant if the project:

- Had a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS

  (Endangered and threatened species referenced in this threshold are those listed by the USFWS and/or CDFG as threatened or endangered. Section 15380 of CEQA indicates that a lead agency can consider a non-listed species (e.g., CNPS List 1B plants) to be endangered, rare, or threatened for the purposes of CEQA if the species can be shown to meet the criteria in the definition of rare or endangered. For the purposes of this discussion, the current scientific knowledge on the population size and distribution for each special status species was considered in determining if a non-listed species met the definitions for rare and endangered according to Section 15380 of CEQA.)

- Had 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
- Had a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, and coastal wetlands) through direct removal, filling, hydrological interruption, or other means
- Interfered substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impeded the use of native wildlife nursery sites
- Conflicted with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflicted with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan
- Increased substantially the ambient noise levels for adjoining areas that interfere with breeding behavior of listed species (LACDPW significance criteria)

For the purposes of this impact analysis, “substantial adverse effect” is defined as the loss or harm of a magnitude which, based on current scientific data and knowledge, would: 1) substantially diminish population numbers of a species or distribution of a habitat type within the region; or 2) eliminate the functions and values of a biological resource in the region.

4.2.6 Impacts

The following section analyzes impacts associated with construction and operation of the proposed project components. The direct (both permanent and temporary) impacts on biological resources associated with the construction of the individual project components are described in this section. Analysis of potential impacts on those sites for which access was not granted (i.e., Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit) is more programmatic. Analysis for these areas has been based on baseline biological conditions assumed from: 1) review of the relevant literature (see Section 4.2.1); 2) visual reconnaissance from immediately adjacent off-site areas; and 3) interpolation from aerial photographs.

4.2.6.1 Construction Impacts

General Impact on Habitat and Wildlife

Except for New Park on Wentworth, Cal Mat Pit, Vulcan Gravel Processing Plant, Sheldon Pit, and Strathern Pit, construction of the proposed project components would only affect low-value and/or disturbed habitats (i.e., ruderal, developed, and/or non-native grassland; see **Table 4.2-1**).

The removal or alteration of these low-value habitats during project construction may result in the loss of small mammals, reptiles, and other wildlife species of slow mobility. However, due to the low value of the habitats present and the relative abundance of the wildlife potentially impacted, construction impacts on these habitats and wildlife would be less than significant for the following project components: **Parking Lot on Sherman, Power Line Easement, Roscoe Elementary School, Stonehurst Elementary School, Stonehurst Park, Storm Drains, Sun Valley Middle School, Street Storage, Onsite BMPs, Tree Planting and Mulching, Tuxford Green, and Valley Steam Plant.**

Construction at **New Park on Wentworth** could affect approximately 1.5 acres of coastal sage scrub, a high-value, native habitat type, in addition to low value and disturbed habitats (i.e., ruderal, developed, and non-native grassland; see **Table 4.2-1**) that are present at this site. The removal or alteration of these habitats during project construction may result in the loss of small mammals, reptiles, and other wildlife of slow mobility. More mobile wildlife species, particularly those that prefer coastal sage scrub habitat, would be forced to move into remaining adjacent areas of open space or lower value habitat, consequently increasing competition for available resources in those areas. Construction impacts on the existing coastal sage scrub habitat and associated wildlife may be considered significant because of the limited regional availability of this native habitat type. However, with incorporation of **Mitigation Measure B-1**, the impacts would be less than significant.

Construction at **Cal Mat Pit, Vulcan Gravel Processing Plant, Sheldon Pit, and Strathern Pit** may result in the loss of low value and/or disturbed habitats (i.e., ruderal, developed, and/or non-native grassland) and high value native habitats (i.e., coastal sage scrub and riparian forest) that may occur at these sites. The removal or alteration of the habitats at these locations would have the potential to result in the loss of small mammals, reptiles, and other wildlife of slow mobility. More mobile wildlife species, particularly those that prefer coastal sage scrub habitat, would be forced to move into remaining adjacent areas of open space or lower value habitat, consequently increasing competition for available resources in those areas. Construction impacts on high-value vegetation types and associated wildlife, if present, may be considered significant because of the limited regional availability of these native habitat types. However, with incorporation of **Mitigation Measure B-2**, the impact would be less than significant.

The original Migratory Bird Treaty Act of 1918 implemented the 1916 Convention between the United States and Great Britain (for Canada) for the protection of migratory birds. Specific provisions of the statute include the establishment of a Federal prohibition, unless permitted, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of the Convention … for the protection of migratory birds … or any part, nest, or egg of any such bird." Bird species protected under the provisions of the Migratory Bird Treaty Act are identified in the List of Migratory Birds provided by USFWS (2004). Construction impacts to nesting birds protected by the Migratory Bird Treaty Act would be a potentially significant impact; however, with incorporation of **Mitigation Measure B-5**, the impact would be less than significant.

Impact on Wildlife Movement

None of the project component sites currently provides a functional connection between two or more habitat patches that would otherwise be fragmented or isolated from one another. Therefore, construction impacts on wildlife movement would be less than significant.

Impact on Special Status Plants

Except at New Park on Wentworth, Cal Mat Pit, Vulcan Gravel Processing Plant, Sheldon Pit, and Strathern Pit, special status plant species were not observed, and are not expected to occur, because historical habitat modification and development have eliminated habitat or substrate with the potential to support these species. Therefore, no adverse impact on special status plants would occur for the following project components: **Parking Lot on Sherman, Power Line Easement, Roscoe Elementary School, Stonehurst Elementary School, Stonehurst Park, Storm Drains, Sun Valley Middle School, Street Storage, Onsite BMPs, Tree Planting and Mulching, Tuxford Green, and Valley Steam Plant.**

Habitat and substrate at **New Park on Wentworth** have limited potential to support the southern tarplant, San Fernando Valley spineflower, and slender-horned spineflower, and have a low potential to support Nevin’s barberry, Plummer’s mariposa lily, mesa horkelia, and Davidson’s bush mallow. Prior to or during the design phase of New Park on Wentworth, focused surveys will be conducted to determine the presence or absence of these special status plant species. The focused surveys will consist of two field surveys conducted several weeks apart between mid April and mid June. If the focused surveys concluded that one or more of these sensitive species is present at the site, and if project construction would result in a substantial adverse effect on the species, this could be considered a significant impact. Impacts on the sensitive species identified above, if present, could be significant and unmitigable even if permitted by the USFWS and CDFG due to the fact that the impact would result in, at least a temporary, reduction of the overall population of those species. **Mitigation Measure B-3** will reduce potential impacts on sensitive plant species. After completion of additional surveys, subsequent CEQA documentation may be prepared to address impacts on biological resources at New Park on Wentworth. (Lewis’ evening primrose has a low potential to be present at this site. However, project impact on Lewis’ evening primrose, if any, would be considered less than significant since the species does not have a state or federal status and is a CNPS status 3 plant.)

Habitat and substrate at **Cal Mat Pit, Vulcan Gravel Processing Plant, Sheldon Pit, and Strathern Pit** have a limited potential to support the southern tarplant, San Fernando Valley spineflower, slender-horned spineflower, and Los Angeles sunflower, and have a low potential to support Nevin’s barberry, Plummer’s mariposa lily, mesa horkelia, and Davidson’s bush mallow. Since access was not permitted at these sites, onsite surveys to observe or determine the potential for special status plant species could not be conducted. Prior to or during the design phase of Cal Mat Pit, Vulcan Gravel Processing Plant, Sheldon Pit, and Strathern Pit, surveys will be conducted to determine the presence or absence of these sensitive plant species. If the surveys concluded that one or more of these sensitive species is present, and if project construction would result in a substantial adverse effect on the species, this could be considered a significant impact. Impacts on the sensitive species identified above, if present, could be significant and unmitigable even if permitted by the USFWS and CDFG due to the fact that the impact would result in, at least a temporary, reduction of the overall population of those species. **Mitigation Measure B-4** will reduce potential impacts on special status plant species. After completion of additional surveys, subsequent CEQA documentation may be prepared to address impacts on biological resources at Cal Mat Pit, Vulcan Gravel Processing Plant, Sheldon Pit, and Strathern Pit. (Lewis' evening primrose has a low potential to be present at these sites. However, project impact on Lewis' evening primrose, if any, would be considered less than significant since the species does not have a state or federal status and is a CNPS status 3 plant.)

Impact on Special Status Wildlife

Except at New Park on Wentworth, Cal Mat Pit, Vulcan Gravel Processing Plant, Sheldon Pit, and Strathern Pit, special status wildlife species were not observed and are not expected to occur, because historical habitat modification and development has eliminated habitat with the potential to support these species. Therefore, no adverse impact on special status wildlife would occur for the following project components: **Parking Lot on Sherman, Power Line Easement, Roscoe Elementary School, Stonehurst Elementary School, Stonehurst Park, Storm Drains, Sun Valley Middle School, Street Storage, Onsite BMPs, Tree Planting and Mulching, Tuxford Green, and Valley Steam Plant.**

Habitat at **New Park on Wentworth** has a very limited potential to support coastal California gnatcatcher and San Diego black-tailed jackrabbit, a limited potential to support silvery legless lizard, and a low potential to support orange-throated whiptail and San Diego horned lizard. Prior to or during the design phase of New Park on Wentworth, focused surveys will be conducted to determine the presence or absence of these sensitive wildlife species. If the surveys concluded that one or more of these sensitive species is present at the site, and if project construction resulted in a substantial adverse effect on the species (including disturbance of breeding behavior by generation of construction noise), this could be considered a significant impact. **Mitigation Measure B-3** will reduce the potential impact on special status wildlife species. After completion of additional surveys, subsequent CEQA documentation may be prepared to address impacts on biological resources at New Park on Wentworth.

Habitat at **Cal Mat Pit, Vulcan Gravel Processing Plant, Sheldon Pit, and Strathern Pit** has a limited potential to support silvery legless lizard, southwestern pond turtle, coastal California gnatcatcher, and San Diego black-tailed jackrabbit, and has a low potential to support orange-throated whiptail, San Diego horned lizard, and least Bell's vireo. Since access was not permitted, onsite surveys to identify special status wildlife species could not be conducted at these sites. Prior to or during the design phase of Cal Mat Pit, Vulcan Gravel Processing Plant, Sheldon Pit, and Strathern Pit, focused surveys will be conducted to determine the presence or absence of these sensitive wildlife species. If the surveys concluded that one or more of these sensitive species is present at the site, and if project construction resulted in a substantial adverse effect on the species (including disturbance of breeding behavior by generation of construction noise), this could be considered a significant impact. Impacts on the sensitive species identified above, if present, could be significant and unmitigable even if permitted by the USFWS and CDFG due to the fact that the impact would result in, at least a temporary, reduction of the overall population of those species. If sensitive wildlife species are determined to be present at any of these sites, **Mitigation Measure B-4** will be implemented to reduce the impact. After completion of additional surveys, subsequent CEQA documentation may be prepared to address impacts on biological resources at Cal Mat Pit, Vulcan Gravel Processing Plant, Sheldon Pit, and Strathern Pit.

Impact on Special Status Vegetation Types

Except at Cal Mat Pit, Vulcan Gravel Processing Plant, Sheldon Pit, and Strathern Pit, historical habitat modification and development has eliminated all special status vegetation types. Therefore, no impact on special status vegetation types would occur for the following project components: **New Park on Wentworth, Parking Lot on Sherman, Power Line Easement, Roscoe Elementary School, Stonehurst Elementary School, Stonehurst Park, Storm Drains, Sun Valley Middle School, Street Storage, Onsite BMPs, Tree Planting and Mulching, Tuxford Green, and Valley Steam Plant.**

At **Cal Mat Pit, Vulcan Gravel Processing Plant, Sheldon Pit, and Strathern Pit**, the following special status vegetation types may be present: Riversidian alluvial fan sage scrub and southern cottonwood-willow riparian forest. Since access was not permitted, onsite surveys to identify special status vegetation types could not be conducted at these sites. Prior to or during the design phase of Cal Mat Pit, Vulcan Gravel Processing Plant, Sheldon Pit, and Strathern Pit, onsite field surveys will be conducted to determine the presence or absence of these sensitive vegetation types. If these special status vegetation types are found to be present at these sites in functional condition and extent and project construction resulted in a substantial adverse effect on these vegetation types, this could be considered a significant impact because of the limited regional availability of these habitats. Incorporation of **Mitigation Measure B-2** would reduce the impact to a less than significant level.

Consistency with Policies and Plans Protecting Biological Resources

Section 46.00 of Los Angeles Municipal Code provides for protection of oak trees. No oak trees are located within the project sites that were surveyed. If any oak trees are present on the four project sites that have not been surveyed (Vulcan Gravel Processing Plant, Cal Mat Pit, Sheldon Pit, and Strathern Pit), the project would be implemented in compliance with the city's oak tree regulations. Since appropriate survey and review by a qualified biologist has been (and will be) conducted, the project would not conflict with policies and programs for protection of endangered species and habitats outlined in the Conservation Element of the City of Los Angeles General Plan.

The project sites are not located within an area designated for any Habitat Conservation Plans, Natural Community Conservation Plans, Significant Ecological Areas, or other approved conservation plans. Therefore, the project would not conflict with any approved conservation plans.

4.2.6.2 Operational Impacts

Once construction is complete, the proposed project is anticipated to have beneficial impacts on biological resources by providing additional or enhanced vegetation and habitats in the project area. The greatest potential for creation of wildlife habitat exists at the project components involving restoration of the gravel pits (i.e., Sheldon Pit, Cal Mat Pit, and Strathern Pit) due to their large sizes. At Cal Mat Pit and Strathern Pit, lakes with permanent pools of water are proposed as part of the stormwater retention facility. At Sheldon Pit and Strathern Pit, wetlands are proposed for stormwater treatment. At the concept design phase, the proposed acreages for these water features are: up to 17 acres of wetlands and 1 acre of lake area at Strathern Pit, approximately 30 acres of wetlands at Sheldon Pit, and approximately 15 acres of lake area at Cal Mat Pit. These surface water features have the potential to attract wildlife, particularly waterfowl. Given the highly urbanized nature of the Sun Valley area, implementation of the proposed project components is anticipated to have a long-term benefit on wildlife. The project will not displace existing habitat areas with high quality water sources and replace them with wetlands of lower quality water. The project will provide new areas of habitat where either none exists or where very low-quality (e.g., disturbed) habitat now occurs. In addition, New Park on Wentworth and the Power Line Easement also provide opportunities for restoration of native habitat types.

In addition to providing localized habitat areas, the larger project components (e.g., Sheldon Pit, Cal Mat Pit, Strathern Pit, and Power Line Easement) have some potential to enhance wildlife movement in the region. By providing additional open space, cover, food, and water, these project components have the potential to serve as wildlife corridors in the project area, where open space areas have become constrained or fragmented as a result of urban development or construction of physical obstacles such as roads. These project components may facilitate wildlife movement between existing regional habitat areas, including the San Gabriel Mountains, Hansen Dam, Angeles National Forest, Griffith Park, and Verdugo Hills. Additional discussion of wildlife corridors is provided in the biological resources technical report (**Appendix D**).

Operational activities for the project include maintenance of stormwater facilities (e.g., removal of trash and sediments), monitoring of surface water and groundwater levels and quality at certain project component sites, mosquito control at created wetlands and lakes as needed, and maintenance of landscaped/revegetated areas. Operation and maintenance activities of revegetated areas and created wetlands/lakes will be implemented in compliance with the requirements of applicable permits from agencies such as USACE, USFWS, and/or CDFG, as appropriate. Since the proposed wetlands, lakes and other habitat enhancements have the potential to attract sensitive species to the project sites, maintenance agreements with these agencies may be required to address any potential operational impacts on sensitive species. In addition, LACDPW may be able to establish wetland mitigation credits for the newly created wetlands. Maintenance activities during project operation would result in less than significant impacts on biological resources. The overall operational impact of the project on biological resources would be beneficial.

4.2.6.3 Impact by Alternative

As described above, known or potential adverse impacts on biological resources are related to construction activities. Therefore, the theoretical worst-case alternative for biological resources is defined as the alternative that would involve the maximum amount of construction, i.e. all proposed project components.

All known construction impacts on biological resources are less than significant. If any special status species are present at New Park on Wentworth (Alternative 1), Vulcan Gravel Processing Plant (all alternatives), Cal Mat Pit (Alternatives 3 and 4), Sheldon Pit (Alternative 2), or Strathern Pit (all alternatives), project construction could have a significant impact on biological resources. Since the presence or absence of the special status species at these sites cannot be determined at this time, construction-related adverse impacts on biological resources among the four County-defined alternatives cannot be compared.

Operation of the project overall would have a beneficial impact on biological resources. The three gravel pits (Cal Mat Pit, Sheldon Pit, and Strathern Pit) provide the greatest opportunities for native habitat restoration. Due to its size and proximity to existing nearby habitat areas (e.g., Hansen Dam), the wetland area and habitat restoration proposed at Sheldon Pit is expected to have the most beneficial impact on biological resources among the three gravel pits. Therefore, among the four County-defined alternatives, Alternative 2 would result in the largest addition of open space and potential habitat area due to the inclusion of the Sheldon Pit component. However, all four alternatives would contribute at least 50 acres of additional open space and at least 30 acres of wetlands and other water features, which would provide valuable habitat for local wildlife in a highly urbanized environment and result in a net increase in high-value vegetation types.

4.2.7 Mitigation Measures

The following mitigation measure will be implemented to reduce the potential impact on the existing coastal sage scrub vegetation at **New Park on Wentworth**.

B-1 The existing coastal sage scrub vegetation at New Park on Wentworth will be incorporated into the park design, or the proposed facilities will be sited to avoid or minimize disturbance and loss of the vegetation during construction. However, if avoidance is not feasible, the following will be implemented:

(a) If the existing coastal sage scrub vegetation will be unavoidably impacted by project construction, the vegetation and associated topsoil will be removed, salvaged or mulched, and stockpiled separately. Following the completion of project construction, the stockpiled topsoil will be replaced and stockpiled vegetation will be replanted (or replaced if mulched) on the site of origin or on another adjacent location as appropriate, under the direction of a qualified biologist. Retention and reapplication of stockpiled topsoil and vegetation will be supplemented with onsite restoration and/or rehabilitation of the same vegetation type at a ratio of 1:1, at minimum, as appropriate and biologically feasible; or

(b) If post-construction restoration and/or rehabilitation locations cannot be identified on-site, then appropriate and biologically feasible locations identified within other component sites shall be expanded to accommodate additional restoration to meet the 1:1 ratio, at minimum; or

(c) If appropriate and biologically feasible restoration and/or rehabilitation for the impacted coastal sage scrub cannot cumulatively be identified within the project component sites, and conditions on the site(s) are appropriate and biologically feasible for a different high-value vegetation type on the site, restoration and/or rehabilitation of this vegetation type may be substituted at a ratio of 1:1, at minimum.

Prior to or during the design phase of **Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit**, onsite field surveys for biological resources will be conducted. As applicable, the following mitigation measure will be implemented to reduce the potential impact on high-value, including special status, vegetation type(s) that may occur at these sites.

B-2 Prior to construction of Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit, the sites will be surveyed in accordance with agency protocols at the appropriate time of the year for the presence or absence of high-value native vegetation and habitats, including special status vegetation and wetland or riparian vegetation. If high value vegetation/habitat types are identified, the proposed facilities will be designed and/or sited to avoid or minimize disturbance and loss of the vegetation and habitats during construction. However, depending on the location of sensitive resources at the sites, if any, project redesign that avoids the biological resources while still meeting the flood control objective of the project component may be infeasible. For example, the large size of the stormwater retention/infiltration basins proposed for the gravel pit sites might preclude complete avoidance of sensitive biological resources. Therefore, if avoidance is not feasible, the following will be implemented:

(a) If a high value vegetation type will be unavoidably impacted by project construction, the vegetation and associated topsoil will be removed, salvaged or mulched, and stockpiled separately. Following the completion of project construction, the stockpiled topsoil will be replaced and stockpiled vegetation will be replanted (or replaced if mulched) on the site of origin or on another adjacent location as appropriate, under the direction of a qualified biologist. Retention and reapplication of stockpiled topsoil and vegetation will be supplemented with onsite restoration and/or rehabilitation of the same vegetation type at a ratio of 1:1, at minimum, as appropriate and biologically feasible; or

(b) If post-construction restoration and/or rehabilitation locations cannot be identified on-site, then appropriate and biologically feasible locations identified within other component sites shall be expanded to accommodate additional restoration to meet the 1:1 ratio, at minimum; or

(c) If appropriate and biologically feasible restoration and/or rehabilitation for the impacted high value vegetation type cannot cumulatively be identified within the project component sites, and conditions on the site(s) are appropriate and biologically feasible for a different high-value vegetation type on the site, restoration and/or rehabilitation of this vegetation type may be substituted at a ratio of 1:1, at minimum.

(d) Each acre of created wetlands that requires maintenance (e.g., sediment removal), and will be used to mitigate impacts to existing wetlands in (a) through (c) above, will be used for mitigation at a ratio of 2:1.

(e) The post-construction native vegetation restoration will be conducted under the direction of a qualified biologist. Where possible, restoration and/or rehabilitation will be consistent with, or a supplement to, any approved Reclamation Plan approved for any of these component sites.

(f) If wetland or riparian vegetation within the waters of the United States will be unavoidably impacted by project construction, USACE will be consulted regarding permits required under Clean Water Act Section 404. All necessary federal and state approvals (including coordination with CDFG and additional CEQA review) will be obtained prior to the implementation of construction activities.

Prior to or during the design phase of **New Park on Wentworth**, focused surveys will be conducted for several special status plant and wildlife species. As applicable, the following mitigation measure will be implemented to reduce the potential impact on <u>special status species</u> that may occur at this site.

B-3 A qualified biologist will conduct focused surveys at New Park on Wentworth for the following special status plant and wildlife species at the appropriate time of the year in accordance with appropriate survey protocols :

- <u>Plants.</u> southern tarplant, San Fernando Valley spineflower, slender-horned spineflower, Nevin's barberry, Plummer's mariposa lily, mesa horkelia, and Davidson's bush mallow
- <u>Wildlife.</u> silvery legless lizard, orange-throated whiptail, San Diego horned lizard, coastal California gnatcatcher, and San Diego black-tailed jackrabbit

If any special status species are identified, the proposed facilities will be designed and/or sited to avoid or minimize disturbance and loss of the species during construction. However, depending on the location of sensitive resources at the sites, if any, project redesign that avoids the biological resources while still meeting the flood control objective of the project component may be infeasible. Therefore, if avoidance is not feasible, restoration and/or rehabilitation as described in Mitigation Measure B-1 will be implemented.

Additionally, if impacts on a federal or state-listed threatened or endangered species cannot be avoided, USFWS and/or CDFG will be consulted regarding permits required under FESA and/or CESA. All necessary federal and state approvals will be obtained prior to the implementation of construction activities that would impact a federal or state-listed threatened or endangered species and the project will be constructed, operated, and maintained in conformance with the terms and conditions of these approvals.

Prior to or during the design phase of **Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit**, onsite field surveys for biological resources will be conducted. As applicable, the following mitigation measure will be implemented to reduce the potential impact on <u>special status species</u> that may occur at these sites.

B-4 Prior to construction of Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit components, onsite field surveys will be conducted at the appropriate time of the year (approximately mid-April to mid-June) to confirm the potential for special status plant and wildlife species to occur on these sites:

- <u>Plants.</u> southern tarplant, San Fernando Valley spineflower, slender-horned spineflower, Los Angeles sunflower, Nevin's barberry, Plummer's mariposa lily, mesa horkelia, and Davidson's bush mallow
- <u>Wildlife.</u> silvery legless lizard and southwestern pond turtle, orange-throated whiptail, San Diego horned lizard, least Bell's vireo, coastal California gnatcatcher, and San Diego black-tailed jackrabbit

If the potential is confirmed for one or more special status species to occur, a qualified biologist will conduct focused surveys for those species in accordance with appropriate survey protocols at the appropriate time of the year. If any special status species are identified during the focused surveys, the proposed facilities will be designed and/or sited to avoid or minimize disturbance and loss of the species during construction. However, depending on the location of sensitive resources at the sites, if any, project redesign that avoids the biological resources while still meeting the flood control objective of the project component may be infeasible. Therefore, if avoidance is not feasible, restoration and/or rehabilitation as described in Mitigation Measure B-2 will be implemented.

Additionally, if impacts on a federal or state-listed threatened or endangered species cannot be avoided, USFWS and/or CDFG will be consulted regarding permits required under FESA and/or CESA. All necessary federal and state approvals shall be obtained prior to the implementation of construction activities that would impact a federal or state-listed threatened or endangered species.

The following mitigation measure will be implemented to reduce the potential impacts on nesting birds protected by the Migratory Bird Treaty Act potentially present at the **Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, Strathern Pit, and New Park on Wentworth**.

B-5 If feasible, project activities with the potential to disturb native and non-native vegetation and man-made nesting structure shall take place outside of the breeding season (which generally runs from March 1 to August 31 and as early as February 1 for some raptors) for birds protected by the Migratory Bird Treaty Act.

If project activities must occur during the breeding season of birds covered by the MBTA, then beginning 30 days prior to construction, weekly bird surveys shall be arranged. The surveys shall continue on a weekly basis with the last survey being conducted no more than 3 days prior to the initiation of clearance/construction work at the site. If a bird covered by the MBTA is detected on the site, then the nesting activity will be monitored to ensure that construction activities do not occur within 300 feet of the nest (500 feet for raptors) until the juvenile birds have fledged and no further nesting attempts are initiated.

4.2.8 Future Analyses

Prior to or during the design phase of New Park on Wentworth, a qualified biologist will conduct focused surveys to determine the presence of several special status plant and wildlife species and nesting birds (see **Mitigation Measures B-3 and B-5**).

Prior to or during the design phase of Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit, onsite field surveys for biological resources will be conducted to determine the presence of high-value vegetation types and confirm the potential for several special status plant and wildlife species to occur. If the onsite field surveys confirm the potential for one or more of the special status species to occur, a qualified biologist will conduct focused surveys for those species and nesting birds (see **Mitigation Measures B-2, B-4, and B-5**).

4.3 CULTURAL RESOURCES

4.3.1 Existing Setting

4.3.1.1 Methodology and Approach

Evaluation of cultural resources in the project area was conducted by Greenwood and Associates, Pacific Palisades, California. The technical report prepared by Greenwood and Associates (2003) is included in **Appendix E**. The evaluation included a review of available literature and records and a pedestrian survey of individual project component sites.

A review of available literature, archaeological site archives, and historical maps was conducted in January 2003 at the South Central Coastal Information Center, California State University, Fullerton. The South Central Coastal Information Center is the regional clearinghouse for the State Office of Historic Preservation, and is the repository of cultural resources records for Los Angeles, Orange, and Ventura Counties. Historical maps reviewed were United States Geological Survey 15-minute quad maps for Santa Monica (years 1902 and 1921) and San Fernando (years 1900, 1924, and 1940).

Pedestrian surveys of Cal Mat Pit, Sheldon Pit, Strathern Pit, and Vulcan Gravel Processing Plant were conducted only from the fence line (and only from the accessible portion of the fence line, generally adjacent to roadways) because on-site access could not be obtained from the property owners. Coordination with property owners included meetings on May 13, 2002. Subsequent to these meetings, requests were made to access the sites. Access to Cal Mat Pit and Sheldon Pit (and Boulevard Pit, which is referenced in Section 7) was denied by Vulcan Materials Company (letter from M. Drennan, MWH, to D. Sprague, Vulcan Materials Company dated August 29, 2002; letter from D. Sprague, to M. Drennan, dated September 5, 2002; V. Bapna, LACDPW, telecon with D. Sprague, April 8, 2004). Access to Strathern Pit was denied by Los Angeles By-Products Company (letter from J. Galizio, BonTerra Consulting to R. McAllister, Los Angeles By-Products Company dated October 8, 2003; telecon with R. McAllister, October 16, 2003; letter from J. Galizio to R. McAllister dated October 16, 2003). Site access to these properties will be obtained and/or the sites will be purchased by LACDPW prior to detailed design of the proposed Watershed Management Plan components.

For the sites that could not be accessed, aerial photographs were reviewed. In addition, literature available at the South Central Coastal Information Center was reviewed for information on the history of these sites. With the exception of one reference (Knight, 2002) (which stated that the materials excavated from gravel pits in the project area were used to construct the Los Angeles Harbor breakwater), no relevant information was found. In addition, the City of Los Angeles Planning Department (R. Giron, pers. comm., February 2003) was contacted to identify mining permits associated with the gravel pits. However, no documents that date back to their period of significance (c. 1890s) were found.

The following project components were not included in the pedestrian survey:

- Storm Drains
- Street Storage

- Onsite BMPs
- Tree Planting and Mulching

The storm drains and the street storage facilities would be constructed underground within existing paved roadways, and therefore are not expected to impact cultural resources. The Onsite BMPs and Tree Planting and Mulching components are proposed as voluntary community involvement programs. Therefore, the locations of these components cannot be determined at this time. Project sites for Onsite BMPs and Tree Planting and Mulching would consist of existing businesses and residences in the project area. Since these sites have most likely been disturbed by previous development, these two project components are not expected to have any substantial impact on cultural resources.

4.3.1.2 Study Area Background

The archaeological record indicates that sedentary populations occupied the coastal and inland regions of California more than 9,000 years ago. Early periods were characterized by processing of hard seeds with the mano and milling stone and the use of the atlatl (dart thrower) to bring down large game such as deer. Villages in the San Fernando Valley were typically around permanent water sources that provided a variety of different habitats for food. Major villages have been excavated in the Sun Valley area near Tujunga Wash, and at least one dates to 2000 B.C. (Knight, 2002). In the later periods, prior to the arrival of Europeans, the bow and arrow was in use, beads were used as money, and the mortar and pestle were used to process acorns. The Native American people that inhabited the region surrounding the project area at the time of European contact are known as Gabrielino.

During the historic period, the area was settled with the creation of the Spanish and Mexican land grants. The project area is located within the lands allotted to Mission San Fernando, which were subsequently sold off as the Ex-Mission San Fernando grant. After Mexico became independent of Spain, all mission lands were secularized in the early 1830s. During this period, Rancho Tujunga, which encompasses most of the study area, was granted to the brothers Pedro and Francisco Lopez. After 1848, when California was passed into the hands of the United States, Rancho Tujunga was divided and sold many times over. During the 1870s, the area was rapidly developing. By 1891, the Sun Valley area was well known for its vineyards and orchards, row crops, and wheat (Knight, 2002).

The Sun Valley area is covered with alluvium from the San Gabriel Mountains created by storms and runoff. These conditions were responsible for the vast areas of rock and gravel. By the turn of the century, the City of Los Angeles was seeking suitable rock material for the Los Angeles Harbor and began to purchase large quantities of stone from miners of Tujunga Wash. In the early 1900s, railroad spurs were extended into the main channels of the wash to load rock and gravel. By the 1930s, the City of Los Angeles had annexed the project area, and development and populations continued to increase (Knight, 2002).

4.3.1.3 Survey Results

The boundary of the study area for the records search at the Information Center consisted of a 0.5-mile radius boundary around the border of the Sun Valley Watershed. The records search found that there have been 29 cultural resource investigations within this study area. Four of these previous investigations included or intersected one or more of the project sites. Within the study area boundary, five historical resources were found. In addition, there were two structures which were evaluated but determined ineligible for the National Register of Historic Places. Among these historical resources and evaluated structures, one structure is located on a proposed project site; the Stonehurst Recreation Center Building located in Stonehurst Park is a City of Los Angeles Historic-Cultural Monument.

During the field survey, no prehistoric or historical artifacts or features were observed on the visible surfaces at any of the surveyed sites. Due to the level of previous development and disturbance that has occurred at the project sites and the geology of the area (i.e., Tujunga Wash floodplain), the potential for encountering prehistoric resources was found to be low for all project components surveyed.

Based on the age and historical usage of the sites, the following seven project components were deemed to have some potential for buried archaeological materials and/or to contain potentially significant historical resources:

- **Cal Mat Pit, Sheldon Pit, and Strathern Pit.** The three exhausted gravel pits date to the 1890s, and were instrumental in the development of the Los Angeles Harbor breakwater (1897-1913) and other significant construction projects in the region (Jones and Stokes, 2000). Because of the age of the facilities, there is some potential that historical machinery, refuse, and structures dating to the earliest period of use may be present.
- **Power Line Easement.** The segment of power transmission lines consists of three parallel sets of towers and line. The ages of the structures could not be determined, but the two lines on the southerly side appear to be older than the one on the northerly side. Recent work in the Angeles National Forest has found that transmission line corridors are potentially eligible to the California Register of Historical Resources (McIntyre, pers. comm.). The power line and/or corridor itself may qualify as an important historical resource.
- **Roscoe Elementary.** The main building of the school was built in 1939, and an earlier school building reportedly erected in 1917 was demolished and replaced by modular structures. The previous existence of early structures suggests that this project component has some historical archaeological potential in the form of privies, structural remains, artifact deposits, and other associated cultural features.
- **Stonehurst Park.** This City of Los Angeles park contains the Stonehurst Recreation Center Building, a stone building complex dating to ca. 1930. This building is designated as City of Los Angeles Historic-Cultural Monument #172. It is also reported that a low stone wall built around the perimeter of the park and a stone wading pool were demolished. Considering the history of the park and the report that stone features were demolished, there is some historical archaeological potential at this site.
- **Valley Steam Plant.** This LADWP power generating facility dates to ca. 1950s, and the plant itself may qualify as an important historical resource. While the level of disturbance within the overall facility is high, there is a potential that historical archaeological deposits or features may still be present.

The sensitivity for historical and archaeological resources was determined to be low for all other project component sites.

4.3.1.4 Paleontological Resources

Paleontological resources are remains of plants and animals, usually fossilized and usually predating human occupation. In the City of Los Angeles, fossils have been found mostly in sedimentary rock that has been uplifted, eroded or otherwise exposed. Most of the sites are in local mountains (City of Los Angeles, 2001).

The proposed project is located within the northeastern portion of the San Fernando Valley, which is a broad, flat, alluvium-filled basin that trends east west. The alluvium is comprised of a broad alluvial fan derived from sedimentary, metamorphic, and granitic bedrock within the San Gabriel Mountains located to the northeast. The alluvial deposits in the eastern portion of the Valley are primarily medium- to coarse-grained sand, gravel, and boulders, with scattered deposits of fine-grained materials.

4.3.2 Significance Criteria

Project impacts related to cultural resources would be considered significant if the project:

- Caused a substantial adverse change in the significance of an historical or archaeological resource
- Directly or indirectly destroyed a unique paleontological resource or site or unique geologic feature
- Disturbed any human remains, including those interred outside of formal cemeteries
- Eliminated important examples of the major periods of California history or prehistory

4.3.3 Impacts

Table 4.3-1 presents the potential impacts on cultural resources by project component.

Table 4.3-1
Potential Impacts on Cultural Resources by Project Component

Project Component	Potential Impact on Cultural Resources before Mitigation				Mitigation Measures*
	Prehistoric	Historical	Archaeological	Paleontological	
Cal Mat Pit	--	PS	PS	--	C-2, C-3, C-4, and C-5
New Park on Wentworth	--	--	--	--	C-3 and C-4
Onsite BMPs	--	--	--	--	C-3 and C-4
Parking Lot on Sherman	--	--	--	--	C-3 and C-4
Power Line Easement	--	L	--	--	C-3 and C-4
Roscoe Elementary School	--	L	PS	--	C-1, C-3, and C-4
Sheldon Pit and Tujunga Wash Transfer	--	PS	PS	--	C-2, C-3, C-4, and C-5
Stonehurst Elementary School	--	--	--	--	C-3 and C-4
Stonehurst Park	--	L	PS	--	C-1, C-3, and C-4
Storm Drains	--	--	--	--	C-3 and C-4
Strathern Pit	--	PS	PS	--	C-2, C-3, C-4, and C-5
Street Storage	--	--	--	--	C-3 and C-4
Sun Valley Middle School	--	--	--	--	C-3 and C-4
Sun Valley Park	--	--	--	--	C-3 and C-4
Tree Planting and Mulching	--	--	--	--	C-3 and C-4
Tuxford Green	--	--	--	--	C-3 and C-4
Valley Steam Plant	--	L	PS	--	C-1, C-3, and C-4
Vulcan Gravel Processing Plant	--	--	--	--	C-3 and C-4

-- No impact or negligible impact
L Less than significant impact
PS Potentially significant impact
* See Section 4.3.4.

4.3.3.1 Prehistoric Resources

Due to the level of previous development and disturbance that has occurred at the project sites and the geology of the area, the potential for encountering prehistoric resources during project construction is considered to be low. The project would have a less than significant impact on prehistoric resources.

4.3.3.2 Historical Resources

Strathern Pit, Cal Mat Pit, and Sheldon Pit. The project would convert Strathern Pit (inert landfill), Cal Mat Pit (the portion currently not being used as an inert landfill), and Sheldon Pit (inactive gravel mine) into stormwater retention facilities. Project construction would require grading and other earth moving activities throughout the pits. The available open space around the gravel pits would be landscaped and used as public parks and wildlife habitat areas.

By providing materials for the construction of the Los Angeles harbor breakwater, these gravel pits may have contributed to the development of the Los Angeles region. However, the integrity of the pits and their settings have been substantially altered from the continued gravel extraction (all three sites) and landfill operation (Strathern Pit) over the years, and therefore, the gravel pits are not anticipated to be eligible for the California Register of Historical Resources.

However, since site access to these gravel pits could not be obtained from the property owners, the presence of original machinery, refuse, or structures that may be eligible to the California Register of Historical Resources cannot be ascertained at this time. Review of available aerial photographs (map scales ranging from approximately 1:7,400 to 1:11,000) was not sufficient to determine the presence of original machinery, refuse, and/or structures at these sites or to evaluate their historical significance. Regardless of scale, aerial photographs would not be sufficient for a complete evaluation, and an onsite pedestrian survey would be necessary. During the design phase of Strathern Pit, Cal Mat Pit, and Sheldon Pit, LACDPW will conduct additional research and on-site surface inventory to determine their presence and, if any, historical significance. (See **Section 4.3.5** below.) If machinery, refuse, and/or structures at Strathern Pit, Sheldon Pit or Cal Mat Pit are determined to be historically significant, Mitigation Measure C-5 will be implemented to reduce project-related impacts to a less-than-significant level. (Strathern Pit is included in all four alternatives. Cal Mat Pit is included in Alternatives 3 and 4. Sheldon Pit is included in Alternative 2 only.)

Power Line Easement. Project construction would include excavation, grading, and landscaping of open areas between the power line towers to create stormwater retention basins. Although their ages have not been determined, the power transmission lines and towers may be eligible for designation as a significant historical resource. However, the proposed project does not involve any modification to these structures. This impact would be less than significant. (This project component is included in all four alternatives.)

Roscoe Elementary School. Project construction would include excavation, grading, and landscaping of the school's open grass areas to create a shallow depression for capturing and infiltrating stormwater. Once construction is complete, disturbed surfaces would be restored to original condition or improved with additional landscaping. The school's main building was built in 1939; based on its age, the building may be eligible for designation as a significant historical resource. However, the project does not include any modification to the building and would not result in any adverse effect on the visual character of the school site. This impact would be less than significant. (This project component is included in Alternative 1 only.)

Stonehurst Park. Project construction would include excavation, grading, and landscaping of the park's open grass areas to create a shallow depression for capturing and infiltrating stormwater. Once construction is complete, disturbed surfaces would be resodded and restored to original condition. The only visible change to the park would be a minor modification to the site topography; i.e., approximately 2.6 acres of the 13 acre park would be depressed by an average of 2 feet. The proposed project does not involve any modification to the Stonehurst Recreation Center Building, a City of Los Angeles Historic-Cultural Monument, and would not result in any substantial change to the visual character of the park or the building. Therefore, the project would not have any substantial adverse change to the Recreation Center Building. This impact would be less than significant. (This project component is included in Alternative 1 only.)

Valley Steam Plant. Project construction would include excavation, grading, and landscaping of a total of 10 acres of the plant's open area to create stormwater retention basins. Some of the existing power plant structures date to the 1950s and may be eligible for designation as a significant historical resource. However, the proposed project does not involve any modification to these structures. Therefore, project-related impacts on any potential historical resource at the plant would be less than significant. (This project component is included in all four alternatives.)

4.3.3.3 Archaeological Resources

Based on the age and historical usage of the sites, the following six project components were deemed to have some potential for buried archaeological materials: Cal Mat Pit, Strathern Pit, Sheldon Pit, Stonehurst Park, Valley Steam Plant, and Roscoe Elementary School. Construction at all of these project sites involves excavation, grading, and/or other earth moving activities. Therefore, there is some potential for encountering buried archaeological resources during project construction at these sites. This is a potentially significant impact. However, implementation of **Mitigation Measures C-1, C-3, and C-4** (for Stonehurst Park, Valley Steam Plant, and Roscoe Elementary School) and **C-2, C-3, and C-4** (for Strathern Pit, Cal Mat Pit, and Sheldon Pit) would reduce potential impacts on buried archaeological resources to a less than significant level.

4.3.3.4 Paleontological Resources

Due to the level of previous development and disturbance that has occurred at the project sites and the geology of the area, the potential for encountering paleontological resources during project construction is considered to be low. The project would have a less than significant impact on paleontological resources.

4.3.3.5 Impact by Alternative

All four project alternatives involve at least three of the six project component sites identified as having some potential for buried archaeological materials (**Table 4.3-2** and **Section 4.3.3** above). Therefore, all four project alternatives would have potentially significant impacts on archaeological resources without mitigation. Project-related impacts on historical resources would depend on the results of additional on-site surveys to determine the presence and historical significance of machinery, refuse, and/or structures at Strathern Pit, Cal Mat Pit, and Sheldon Pit. If historically significant artifacts are found, **Mitigation Measure C-5** will be implemented to reduce project-related impacts to a less-than-significant level. Alternative 2 includes Sheldon Pit, and Alternatives 3 and 4 include Cal Mat Pit. Strathern Pit is included in all four alternatives.

Currently known significant resources would not be disturbed under any alternative and mitigation measures have been developed to minimize impacts to cultural resources. Therefore, the overall impact significance of the four described alternatives or any worst-case alternative (implementation of all project components) is considered to be similar for all alternatives.

Table 4.3-2
Summary of Cultural Resources Issues by Alternative

Project Component	Potential Cultural Resources Issue	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Cal Mat Pit	Unknown buried archaeological materials, potential for presence of original machinery, refuse, and/or structures			✓	✓
Sheldon Pit and Tujunga Wash Transfer	Unknown buried archaeological materials, potential for presence of original machinery, refuse, and/or structures		✓		
Roscoe Elementary School	Unknown buried archaeological materials	✓			
Stonehurst Park	Unknown buried archaeological materials	✓			
Strathern Pit	Unknown buried archaeological materials, potential for presence of original machinery, refuse, and/or structures	✓	✓	✓	✓
Valley Steam Plant	Unknown buried archaeological materials	✓	✓	✓	✓

4.3.4 Mitigation Measures

The following mitigation measures would minimize the potential impacts on cultural resources:

C-1 A professional monitor qualified in historical archaeology shall be present for subsurface work between the surface and 5 feet in depth at the following project component sites: Stonehurst Park, Valley Steam Plant, and Roscoe Elementary School. If potentially important cultural deposits are encountered in the course of construction, work should be temporarily diverted from the vicinity of the discovery until the monitoring archaeologist can identify and evaluate the importance of the find and conduct any appropriate assessment and activities, as necessary.

C-2 On the first day of subsurface work, if any, at Strathern Pit, Cal Mat Pit and Sheldon Pit, a professional monitor qualified in historical archaeology shall be present to assess whether further monitoring might be warranted.

C-3 If previously unknown cultural resources are discovered in the course of excavation for project construction at any project site, the construction inspector shall have the authority and responsibility to halt construction until a qualified archaeologist can evaluate the significance and distribution of the materials, and identify future activities needed. If the cultural material discovered is determined to be of potential archaeological significance, the investigation and future activities shall be conducted in consultation with culturally affiliated Native American or other parties, as necessary.

C-4 If human remains are discovered in the course of excavation for project construction, the County Coroner shall be contacted and provisions of State CEQA Guidelines Section 15064.5 would be followed.

C-5 During the design phase of Strathern Pit, Cal Mat Pit, and Sheldon Pit, LACDPW will conduct on-site surveys to determine presence of original machinery, refuse and/or structures that date from the period of concern. If any are found, LACDPW will evaluate whether they are a historical resource using the criteria described in Section 15064.5(a) of the State CEQA Guidelines. If any equipment and/or structures at Strathern Pit, Sheldon Pit, or Cal Mat Pit are determined to be a historical resource, LACDPW will:

- Incorporate the artifact into design of the project component, or
- Remove and relocate the artifact to an appropriate location (i.e., museum, public library, or school), or
- Document with photographs and engineering drawings

4.3.5 Future Analyses

During the design phase of Strathern Pit, Cal Mat Pit, and Sheldon Pit, LACDPW will conduct on-site surveys to determine presence of original machinery, refuse and/or structures that date from the period of concern (see **Mitigation Measure C-5**).

4.4 GEOLOGY AND SOILS

4.4.1 Existing Setting

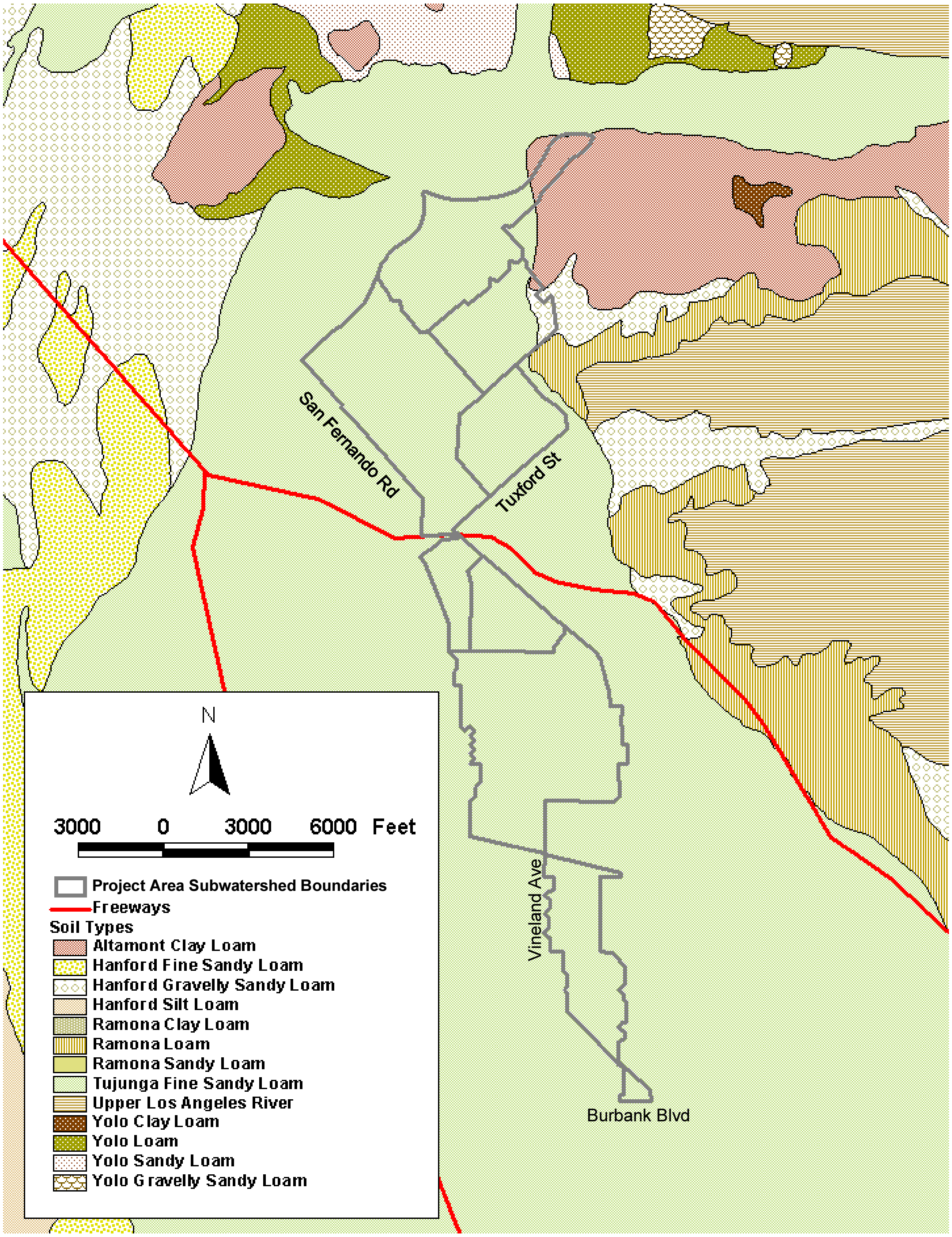
4.4.1.1 Regional Geology and Soils

The project is located within the northeastern portion of the San Fernando Valley, which is bounded to the north by the San Gabriel Mountains, to the east by the Verdugo Mountains, to the west by the Simi Hills and to the south by the Santa Monica Mountains. These features are located within the Transverse Ranges geomorphic province of California, a series of east-west trending mountains and sediment filled valleys. The San Fernando Valley is a broad, flat, alluvium-filled basin that trends east-west. A number of alluvial fans (cone-shaped deposits of sediments transported by streams) have accumulated at the base of the mountains surrounding the San Fernando Valley (LADWP, 1992).

The project area is located on the Tujunga alluvial fan, which begins at the northeast corner of the San Fernando Valley where the Little and Big Tujunga drainages originate from the San Gabriel Mountains (near the eastern edge of Hansen Dam). The alluvial deposits in the project area are primarily medium- to coarse-grained sand, gravel, and boulders, with scattered deposits of fine-grained materials. The depth of the alluvial materials within the project area is estimated to range from a few hundred feet below ground surface (bgs) near the intersection of Tuxford Street and Glenoaks Boulevard to approximately 1,000 feet bgs or more near the southern end of the project area (LACDPW, 1995).

Native soils in the project area are primarily Tujunga fine sandy loam. Other soil types in the project area include Altamont clay loam and Hanford gravelly sandy loam (**Figure 4.4-1**).

Figure 4.4-1
Soil Types in Sun Valley Watershed

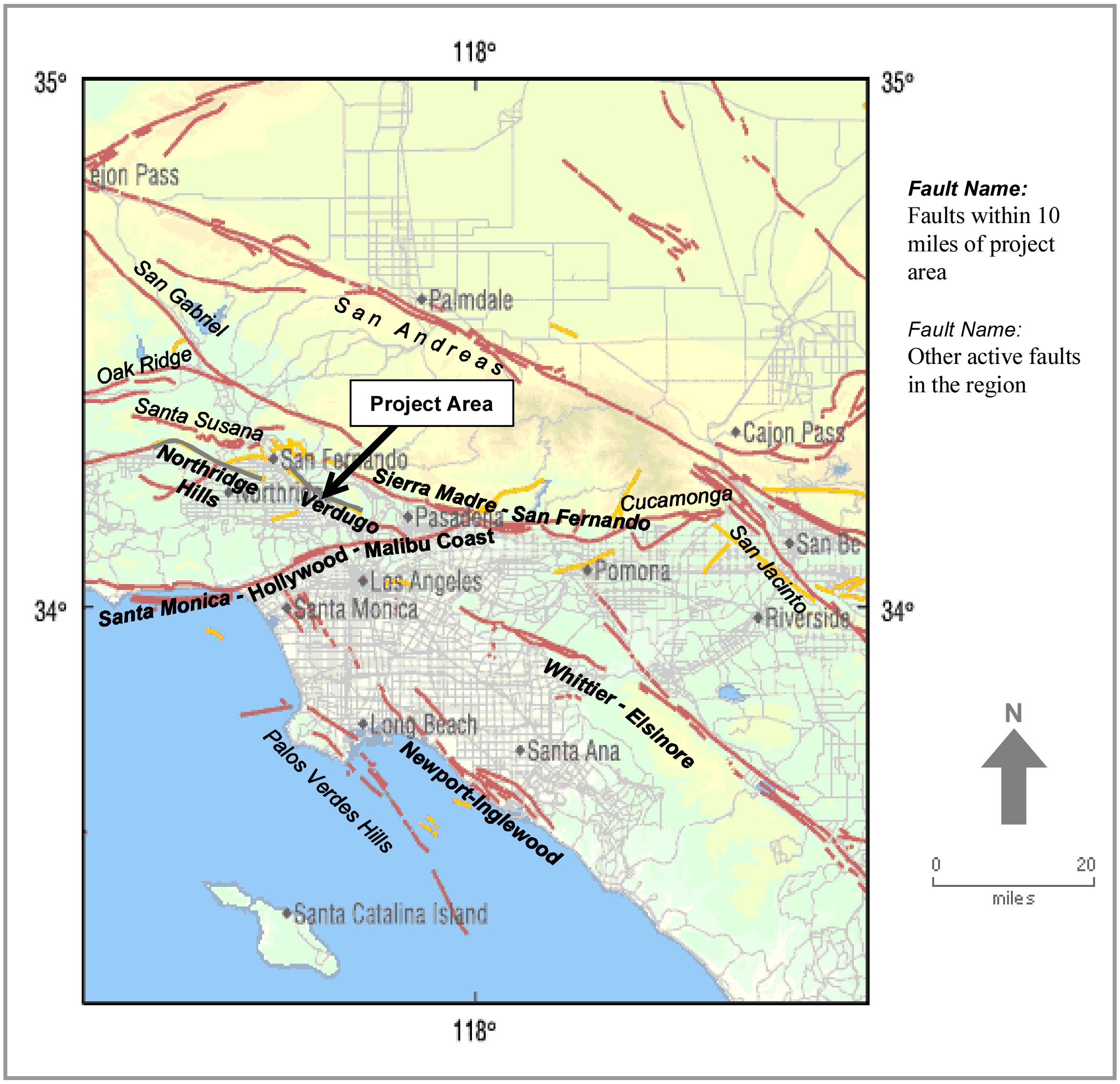


Source: LACDPW GIS Database

4.4.1.2 Faults

Active faults located within 10 miles of the project area are Verdugo, Sierra Madre-San Fernando, Santa Monica-Hollywood-Malibu Coast, Whittier-Elsinore, Newport-Inglewood, and Northridge Hills (**Figure 4.4-2**). The Verdugo Fault is the only fault that intersects the project area. In addition, the Oak Ridge Fault, which is thought to be associated with the 1994 Northridge earthquake, is located outside of the 10-mile range but may be of concern for the project area (**Figure 4.4-2**). **Table 4.4-1** lists the faults of concern for the project area, the distances from the project area, and the maximum credible earthquake Magnitude associated with each fault.

Figure 4.4-2
Regional Fault Map



Source: USGS, 2003.

Table 4.4-1
Faults of Concern for the Project Area

Fault Name	Distance to Fault (miles)		Maximum Credible Magnitude
	North End of Project	South End of Project	
Verdugo	<1	2	6.7
Sierra Madre-San Fernando	2	6	7.5
Santa Monica-Hollywood-Malibu Coast	11	6	7.5
Whittier-Elsinore	15	10	7.5
Newport-Inglewood	14	9	7.0
Northridge Hills	5	8	6.5
Oak Ridge	22	26	7.2

Source: LACDPW, 1995.

Verdugo Fault. The Verdugo Fault lies along the southerly margin of the Verdugo Hills and projects northwesterly across the Tujunga fan. This fault extends across the northern portion of the project area near San Fernando Road, between Tuxford Street and Sheldon Street (LACDPW, 1995). The Verdugo Fault is a thrust fault, trending along the southwest flank of the Verdugo Mountains. It is considered capable of generating a maximum credible earthquake of Magnitude 6.7 (LACDPW, 1995).

Sierra Madre-San Fernando Fault. The Sierra Madre-San Fernando Fault comprises the westerly portion of the Sierra Madre/Cucamonga thrust fault system, which trends northwest-southeast along the base of the San Gabriel Mountains, between the San Fernando Valley and San Bernardino (LACDPW, 1995). At its closest point, the fault is located approximately 2 miles northeast of the northern end of the project area (LACDPW, 1995). It is anticipated that this fault system is capable of producing a Magnitude 7.5 event.

Santa Monica-Hollywood-Malibu Coast Fault System. The Santa Monica-Hollywood-Malibu Coast fault system extends from near the west end of the Raymond Hill Fault on the east, across the southerly flank of the Santa Monica Mountains, and extends eastward and offshore approximately 8 miles west of Point Dume. It is anticipated that this fault system is capable of producing a Magnitude 7.5 event.

Whittier-Elsinore Fault. The Whittier-Elsinore Fault is located about 10 miles southeast of the southern end of the project area. The fault zone ranges in width from several tens of feet to about 3 miles. Historic activity has been limited to microseismicity and several Magnitude 4 or less events. The Whittier-Elsinore Fault is considered capable of generating a Magnitude 7.5 earthquake.

Newport-Inglewood Fault. The Newport-Inglewood Fault is located about 9 miles southwest of the southern end of the project. It trends northwest-southeast between Newport Beach and Beverly Hills, a distance of approximately 40 miles. It is considered capable of generating a Magnitude 7.0 earthquake.

Northridge Hills Fault. The Northridge Hills fault is a reverse fault located about 5 miles from the north end of the project. It trends northwest-southeast for a distance of approximately 16 miles. A Magnitude 6.5 earthquake can be expected to occur along the fault (LACDPW, 1995).

Oak Ridge Fault. The Oak Ridge Fault is a thrust fault that extends from the southwest to the northeast, roughly paralleled by both the Santa Clara River and State Highway 126. The Oak Ridge thrust continues offshore out to a point about 13 miles due south of Santa Barbara. The fault associated with the 1994 Northridge earthquake is probably part of the Oak Ridge fault system. Probable Magnitudes associated with the Oak Ridge Fault are 6.5 to 7.5 (SCEDC, 2003).

4.4.1.3 Seismic Ground Shaking and Surface Rupture

Seismic Ground Shaking. As with the rest of southern California, the project area is located in a seismically active region. Historical seismic records indicate that between 1932 and 2000, approximately 37 earthquakes of Magnitude 5.0 or greater have occurred within 50 miles of the project area. The greatest concentration of historical, local seismic events has resulted from activity on the Oak Ridge Fault (primarily related to the 1994 Northridge earthquake) and activity on the Sierra Madre-San Fernando Fault (related to the 1971 San Fernando earthquake) (SCAQMD, 2002a). The maximum credible peak ground acceleration (measured against gravity, or 1.0g) anticipated for the project area ranges from 0.5g to 0.65g (LACDPW, 1995). A seismic hazard assessment was completed in November 2000 for the Valley Steam Plant site as a part of the Environmental Impact Report for the installation of a combined cycle generating facility (SCAQMD, 2002a). The Valley Steam Plant, which is one of the project component sites for the Watershed Management Plan, is located in the northwestern portion of the project area. The results of this study indicate that the Valley Steam Plant site is subject to the effects of moderate to large seismic events. Based on this analysis, the Verdugo Fault was identified as the structure most likely to cause the earthquake that would result in peak ground accelerations. The analysis determined the expected peak ground acceleration with a 10 percent probability of exceedance in 50 years to be 0.9 g (SCAQMD, 2002).

Surface Rupture. Surface rupture occurs when movement on a fault deep within the earth breaks through to the surface. Fault rupture almost always follows preexisting faults, which are zones of weakness. Rupture may occur suddenly during an earthquake or slowly in the form of fault creep. Sudden displacements are more damaging to structures because they are accompanied by shaking.

The Alquist-Priolo Earthquake Fault Zoning Act is a California law passed in 1972 to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The Act only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards. The law requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones) around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities, counties, and state agencies for their use in planning and controlling new or renewed construction (California Geological Survey, 2002a). According to the California Geological Survey (2002b), the project area is located outside of areas identified as active fault traces within the Alquist-Priolo Earthquake Fault Zones.

4.4.1.4 Landslides / Slope Instability

Landslides involve the downslope movement of masses of soil and rock material under gravity. Landslides can be caused by ground shaking, such as earthquakes, or heavy precipitation events. Generally, landslides occur on the sideslopes of mountains comprised of sedimentary materials.

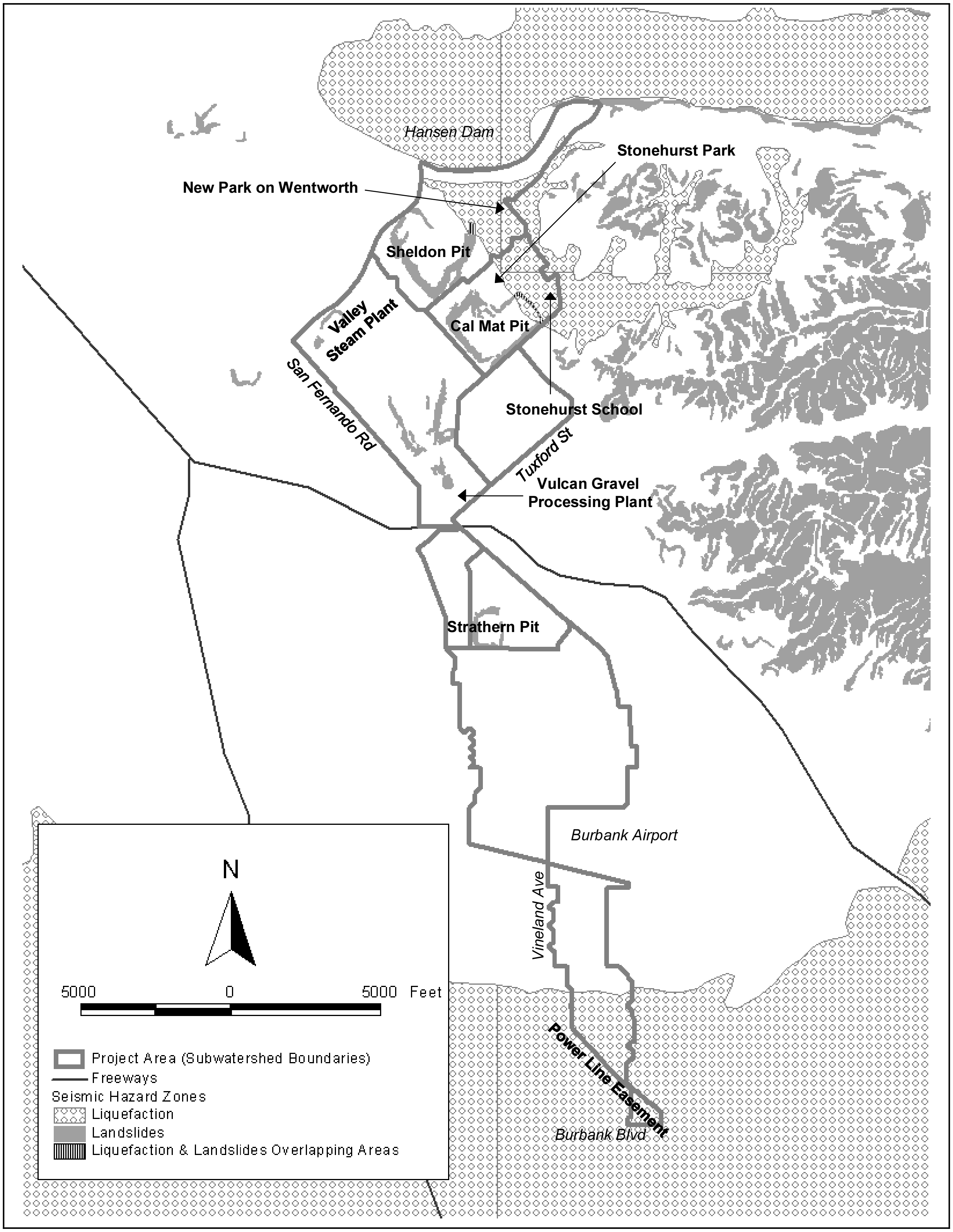
The project area is located in the northeastern portion of the San Fernando Valley, and does not encompass the hillside areas located to the east. Apart from the gravel pits and the landfills, no significant topographic relief exists in the project area. Areas susceptible to earthquake-induced landslides are identified in the State of California Seismic Hazard Zones Map (**Figure 4.4-3**), which was prepared by the California Department of Conservation Division of Mines and Geology (1999, now California Geological Survey). Project component sites that overlap with landslide hazard zones include Strathern Pit, Cal Mat Pit, and Sheldon Pit. The gravel pit located within Valley Steam Plant and portions of Vulcan Gravel Processing Plant are also identified as landslide hazard zones; however, the proposed project does not involve any modifications to these areas.

4.4.1.5 Liquefaction

Liquefaction is a process by which sediments below the water table temporarily lose strength and behave as a liquid rather than a solid. In the liquefied condition, soil may deform enough to cause damage to buildings and other structures. Seismic shaking is the most common cause of liquefaction. Liquefaction occurs in sands and silts in areas with high groundwater levels. Liquefaction has been most abundant in areas where groundwater occurs within 30 feet of the ground surface. Few instances of liquefaction have occurred in areas with groundwater deeper than 60 feet (EERI, 1994). Dense soils, including well-compacted fills, have low susceptibility to liquefaction (EERI, 1994).

Review of the State of California Seismic Hazard Zones Map (California Department of Conservation, 1999) indicates that portions of the project area are located in areas considered susceptible to liquefaction based on historical occurrence of liquefaction or local geological and groundwater conditions (**Figure 4.4-3**). Project components located in these areas include the Power Line Easement, Stonehurst Elementary School, New Park on Wentworth, and portions of Cal Mat Pit, Sheldon Pit, and Stonehurst Park.

Figure 4.4-3
Landslides and Liquefaction Hazard Zones in the Project Area



Source: California Department of Conservation, 1999.

4.4.1.6 Expansive Soils

Expansive soils are soils that expand and contract due to changes in moisture content. Expansive soils typically contain clay minerals that attract and absorb water. Another category of expansive soil known as swelling bedrock contains a mineral called claystone. The expansion and contraction of expansive soils can result in differential movement beneath foundations of buildings and cause structural damages, including cracking in walls or foundations, uneven floors, and destabilization. Soil types present in the project area (**Figure 4.4-1** above) are not susceptible to expansion since they primarily consist of coarse-grained materials.

4.4.1.7 Subsidence

Land subsidence is the lowering of the ground surface due to groundwater withdrawal or seismic activity. Seismic-induced movements may cause subsidence on the depressed side of a fault, or relatively small-scale subsidence can also occur when dry soils are saturated with water due to seismic activity. In the City of San Fernando, which is located approximately 2 miles to the northwest of the project area, subsidence rates are 3 to 4 millimeters per year. This rate decreases gradually southward along the Verdugo Mountains and towards the Santa Monica Mountains.

4.4.1.8 Soil Erosion Potential

Most of the project component sites are developed with public facilities (Stonehurst Park, Stonehurst Elementary School, Roscoe Elementary School, and Sun Valley Middle School) and industrial or commercial facilities (Valley Steam Plant, Vulcan Gravel Processing Plant, Parking Lot on Wentworth). At these project component sites, the proposed retention basins and underground tanks would be constructed in areas that are paved or covered with grass. The proposed storm drains and the Street Storage component would be constructed beneath existing paved roadways. Project component sites that include unimproved surfaces include the gravel pits (Sheldon Pit, Cal Mat Pit, and Strathern Pit), New Park on Wentworth, the Power Line Easement, and Tuxford Green.

4.4.2 Significance Criteria

Project impacts related to geology and soils would be considered significant if the project:

- Exposes people or structures to risk of substantial damage, loss, injury, or death involving:
  - Rupture of a known earthquake fault
  - Strong seismic ground shaking
  - Seismic-related ground failure, including liquefaction
  - Landslides / slope instability
  - Expansive soils
  - Subsidence

- Results in substantial soil erosion or the loss of topsoil

4.4.3 Impacts

4.4.3.1 Seismic Ground Shaking and Surface Rupture

Located in a seismically active area, the project sites would be subject to ground shaking during a seismic event. The project sites are located outside of areas identified as Alquist Priolo Earthquake Fault Zones. However, there are many active faults in the area, the closest of which is the Verdugo Fault. Surface ruptures could occur within the project area if movement occurred along the Verdugo Fault or another previously unknown fault underlying the area.

The project does not involve construction of habitable structures. Project sites include existing schools (Sun Valley Middle School, Roscoe Elementary School, and Stonehurst Elementary School) and an existing park (Stonehurst Park). The project also proposes to convert gravel pits (Cal Mat Pit, Sheldon Pit, and Strathern Pit) and a vacant site (New Park on Wentworth) into new parks. However, implementation of the proposed project would not result in any change in seismic risk at these sites.

Facilities proposed as part of the project include surface retention basins, shallow depressions for stormwater collection, pump station buildings, underground tanks, and storm drains. During an earthquake, these facilities could be damaged. Failure of storm drains and underground tanks could result in release of water to the immediate vicinity, but would not create dangerous conditions to nearby residences since the structures are buried. Shallow excavations would not create unstable earth conditions or cause changes in geologic substructures that would increase earthquake hazards. Retention basins would be constructed on areas of flat slope (Valley Steam Plant, Vulcan Gravel Processing Plant, and Power Line Easement) or within exhausted gravel pits (Cal Mat Pit, Sheldon Pit, and Strathern Pit). The effect of seismic shaking on these retention basins is not critical, as there are no structures to settle or break except earthen berms. Berm breach would not cause flooding onsite, as the inverts would be below grade. The Valley Steam Plant project component involves temporary storage of stormwater in former oil tanks during large storm events. Failure of these tanks during an earthquake could result in release of water to the immediate vicinity, but would not create dangerous conditions since the tanks are surrounded by containment berms.

The construction and installation activities for the project would conform to the latest versions of the City of Los Angeles Building Code and other applicable building codes. Adherence to these regulations is required for the project and would minimize potential seismic impacts to the proposed structures. Therefore, the impacts of the project related to seismic ground shaking and surface rupture would be less than significant.

4.4.3.2 Landslides / Slope Instability

The side slopes of Strathern Pit, Cal Mat Pit, and Sheldon Pit are potentially susceptible to landslides in the event of an earthquake or heavy precipitation. Under existing conditions, these exhausted gravel pits are privately owned and operated as inert landfills for construction debris

(Cal Mat Pit and Strathern Pit) or as a disposal location for gravel washwater (Sheldon Pit). The proposed project would convert one or more of these pits into public parks with surface stormwater retention facilities. Construction of the stormwater retention facilities at these pits would require substantial earth moving activities. To ensure that modification of the gravel pits does not result in unstable slope conditions, evaluation of slope stability will be conducted as a part of the geotechnical analyses during detailed design of these project components. The recommendations of the geotechnical study would include optimum slope design for stability and safety, soil compaction or recompaction requirements, surface cover, and potentially other slope stabilizing measures.

With incorporation of the recommendations in the site-specific geotechnical study, implementation of the proposed project would stabilize the side-slopes and minimize the risk of landslides. Therefore, the potential risk to future park visitors with respect to slope instability would be less than significant.

4.4.3.3 Liquefaction

The project involves infiltration of stormwater at various locations throughout the watershed. If project-related stormwater infiltration caused groundwater levels to rise within 30 feet of the surface, the project could result in an increased risk of liquefaction. Groundwater modeling completed by LADWP (**Appendix F**) for the proposed project concluded that project-related infiltration would raise groundwater levels by approximately 20 feet over 10 years compared to the no-project scenario (see Section 4.7 for a summary of the methodology and results of the groundwater modeling). In general, current groundwater levels in the project area range from over 250 feet bgs to 100 feet bgs. Therefore, a 20-foot rise is not expected to result in an increase in liquefaction risk in the general project area.

However, as indicated in Section 4.4.1.5 above, portions of the project area are located in areas considered by the California Geological Survey to be susceptible to liquefaction based on historical occurrence of liquefaction or local geological and groundwater conditions. Project components located in these areas include the Power Line Easement, New Park on Wentworth, Stonehurst Elementary School, and portions of Cal Mat Pit, Sheldon Pit, and Stonehurst Park. If large volumes of stormwater were infiltrated over a short period of time (i.e., in the event of a large storm) at these project components, it may have a "mounding" effect, causing a localized increase in the groundwater level beneath the infiltration basins. Based on the sizes of the infiltration facilities, Sheldon Pit, Power Line Easement, and Cal Mat Pit have the greatest potential to cause a substantial mounding effect, if any. Due to the limited capacities of the proposed facilities, infiltration at New Park on Wentworth, Stonehurst Elementary School, and Stonehurst Park is not expected to result in an increased liquefaction risk. (See Section 4.7.4.1 for the amount of stormwater to be infiltrated at each project component site.) Therefore, the project components of concern with respect to liquefaction are Sheldon Pit, Power Line Easement, and Cal Mat Pit.

Any potential increase in on-site liquefaction risk at Sheldon Pit and Cal Mat Pit is considered to be less than significant since these project components do not involve habitable structures. Increased liquefaction risk at the Power Line Easement would be a potentially significant impact on the existing power line towers. In addition, if infiltration at Sheldon Pit, Cal Mat Pit, or the Power Line Easement resulted in substantially increased liquefaction risk for adjacent properties, the impact is potentially significant. To ensure that stormwater infiltration at Sheldon Pit, Cal Mat Pit, and the Power Line Easement does not result in an increased liquefaction risk, monitoring wells proposed for the Phase 1 projects (Cal Mat Pit, Sun Valley Middle School, and Valley Steam Plant) of the Watershed Management Plan as well as existing wells in the project area will be installed to detect any substantial increase in groundwater levels. (See Section 4.7 for additional information on groundwater monitoring for the proposed project.) If monitoring indicates a substantial rise in groundwater levels (i.e., within 30 feet of the surface) at or near Sheldon Pit, Cal Mat Pit, or the Power Line Easement, stormwater would not be infiltrated and would be diverted into storm drains or onto street surfaces. Therefore, with incorporation of Mitigation Measure G-2, project impacts related to liquefaction would be less than significant.

4.4.3.4 Expansive Soils

The project involves infiltration of stormwater at various locations throughout the watershed. Project-related infiltration would likely alter the moisture content of the soils in the immediate vicinity of the infiltration areas. However, soils in the project area are alluvial deposits and are not susceptible to expansion from changes in moisture content. Therefore, the project is anticipated to have no impacts related to expansive soils.

4.4.3.5 Subsidence

The proposed project would involve minor groundwater withdrawal for groundwater quality monitoring. However, the amount required would be a negligible fraction of existing groundwater extractions in the area and would be more than offset by the proposed infiltration of stormwater, which would overall result in a beneficial impact with respect to subsidence. Therefore, the proposed project is not expected to result in subsidence. No impacts would occur.

4.4.3.6 Soil Erosion

Soil disturbance associated with project construction will increase the potential for wind and water erosion in the immediate vicinity of the facilities. As required by the Environmental Protection Agency and the Regional Board, the construction contractor(s) will develop and implement a Stormwater Pollution Prevention Plan (SWPPP) during construction of various project components. This plan is required as part of the National Pollution Discharge Elimination System (NPDES) Permit for discharge of stormwater associated with construction activities greater than 1 acre in area. Incorporation of stormwater best management practices in the SWPPP would reduce the potential for soil erosion during construction. Specific erosion control measures to be considered for inclusion in site-specific SWPPPs are listed in **Section 4.7 – Water Quality**. Therefore, with the incorporation of such control measures in the SWPPPs, construction impact on soil erosion is expected to be less than significant.

Once construction is complete, the surface at each project site would be, at minimum, restored to its original condition (i.e., paved or sodded). Some of the proposed project components (i.e., New Park on Wentworth, Sheldon Pit, Cal Mat Pit, Strathern Pit, Tuxford Green, and Power

Line Easement) currently have unimproved surfaces that are prone to soil erosion. Implementation of the project would reduce the soil erosion potential at these sites by increasing the vegetative cover and improving slope stability (at the gravel pits). Therefore, the project is expected to have a beneficial impact with respect to soil erosion once construction has been completed.

4.4.3.7 Impact by Alternative

As described above, issues of concern for the project with respect to geology and soils are slope instability, liquefaction, and soil erosion.

For slope instability, the theoretical worst-case alternative is defined as the alternative that would involve all three gravel pits (i.e., Cal Mat Pit, Sheldon Pit, and Strathern Pit). Among the County-defined alternatives, Alternatives 2, 3, and 4 (each involves two gravel pits) would have greater impacts than Alternative 1 (involves Strathern Pit only).

For liquefaction, the theoretical worst-case alternative is defined as the alternative that would involve all of the following project components: Sheldon Pit, Cal Mat Pit, Power Line Easement, Stonehurst Elementary School, and Stonehurst Park. Among the County-defined alternatives, Alternative 2 would result in greater potential for increased risk of liquefaction compared to Alternatives 1, 3, and 4 due to the large amount of infiltration proposed at Sheldon pit.

For soil erosion, the theoretical worst-case alternative is defined as the alternative that would involve the maximum amount of construction (i.e., all proposed project components). Among the four County-defined alternatives, Alternative 2 has a higher potential for soil erosion since it would result in approximately 60 acres of additional surface disturbance during construction compared to Alternatives 1, 3, or 4.

Under all project alternatives, impacts related to slope instability, liquefaction, and soil erosion would be less than significant with incorporation of the mitigation measures described below.

4.4.4 Mitigation Measures

Seismic Ground Shaking and Surface Rupture. None required.

Landslides / Slope Instability.

G-1 During detailed design of Cal Mat Pit, Sheldon Pit, and Strathern Pit components, LACDPW will incorporate the recommendations of the geotechnical analysis, which will include optimum slope design for stability and safety, soil compaction or recompaction requirements, surface cover, and potentially other slope stabilizing measures.

Liquefaction.

G-2 To ensure that stormwater infiltration at Sheldon Pit, Cal Mat Pit, and the Power Line Easement does not result in an increased liquefaction risk, monitoring wells proposed for the Phase 1 projects (Cal Mat Pit, Sun Valley Middle School, and Valley Steam Plant) of the Watershed Management Plan as well as existing wells in the project area will be used to detect any substantial increase in groundwater levels. If monitoring indicates a substantial rise in groundwater levels (i.e., within 30 feet of the surface) at or near Sheldon Pit, Cal Mat Pit, or the Power Line Easement, stormwater would not be infiltrated and would be diverted into storm drains or onto street surfaces.

Expansive Soils. None required.

Subsidence. None required.

Soil Erosion. **Section 4.7 – Hydrology and Water Quality** lists possible erosion control measures to be incorporated into site-specific SWPPPs. Measures to reduce fugitive dust generated during construction (see **Section 4.1 – Air Quality**) will also minimize the potential for wind erosion of soils.

4.4.5 Future Analyses

Prior to construction of all project components (except Onsite BMPs and Tree Planting and Mulching), a detailed geotechnical investigation will be performed to define site-specific subsurface conditions. The following specific consideration will be included:

- Geotechnical analyses of the project components involving gravel pits (Cal Mat Pit, Sheldon Pit, and Strathern Pit) will include evaluation of slope instability. The recommendations of the geotechnical study will include optimum slope design for stability and safety, soil compaction or recompaction requirements, surface cover, and potentially other slope stabilizing measures.
- State of California Division of Mines and Geology Special Publication 117 "Guidelines for Evaluation and Mitigating Seismic Hazards in California" will be reviewed to determine the necessity of detailed liquefaction and seismic stability analyses.

4.5 HAZARDS AND HAZARDOUS MATERIALS

(Geologic hazards are addressed in Section 4.4.)

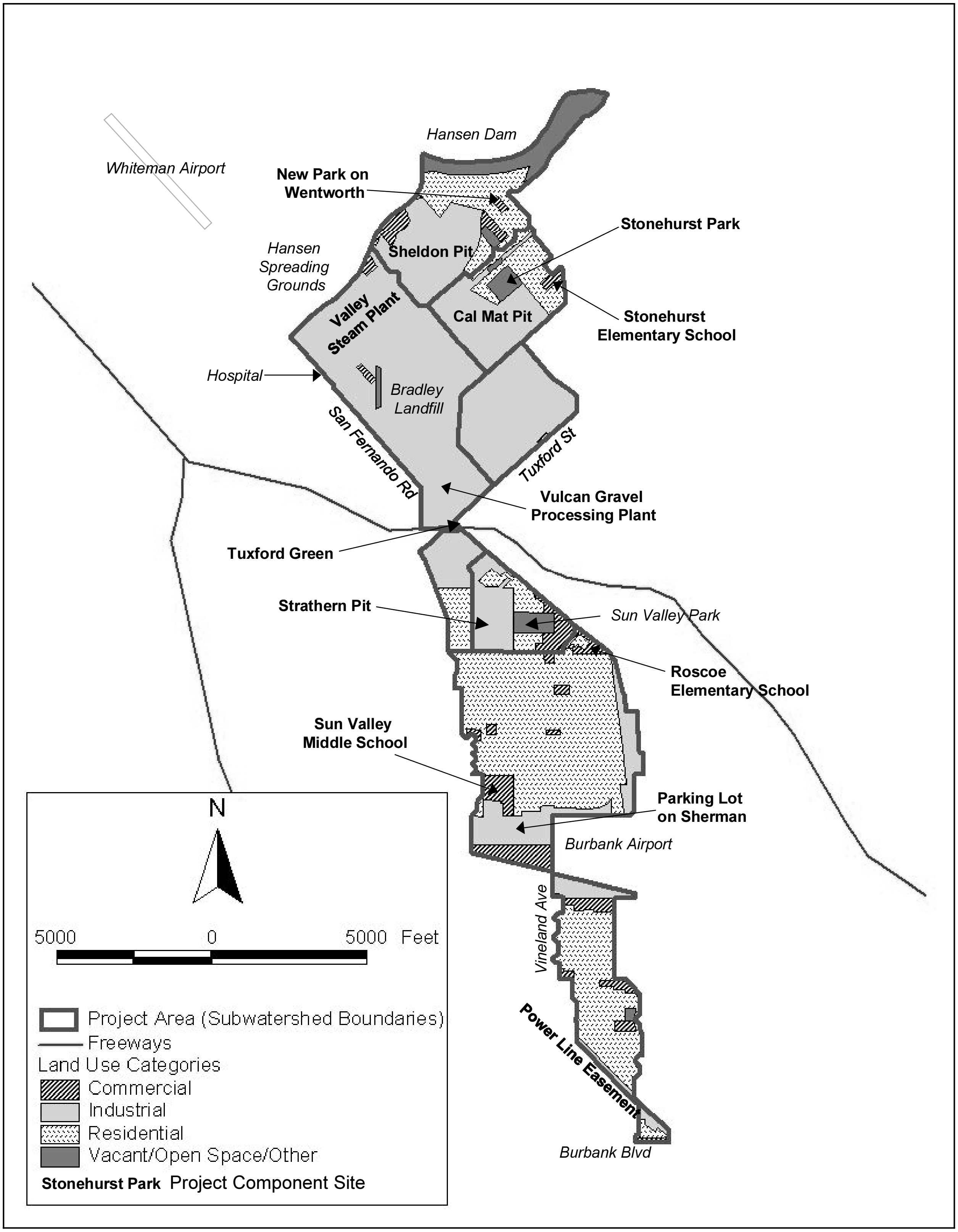
4.5.1 Existing Setting

4.5.1.1 Existing Land Uses

The project area is highly urbanized and includes industrial, commercial, and residential land uses (**Figure 4.5-1**). Land uses at the northern and northeastern end of the watershed are primarily open space and low-density residential, including Hansen Dam Golf Course, Stonehurst Park, Stonehurst Elementary School, and the surrounding residential neighborhood. Pacifica Hospital of the Valley is located on the western corner of San Fernando Road and Sheldon Street. The Hansen Spreading Grounds are located outside of the watershed and immediately northwest of the Valley Steam Plant. The remaining area in the northern watershed (north of Tuxford-San Fernando intersection) is dominated by industrial uses. These include exhausted gravel pits used as landfills for inert construction debris (Cal Mat Pit) or gravel wash water disposal (Sheldon Pit), an active municipal landfill (Bradley Landfill), a power generating facility (Valley Steam Plant), Vulcan Gravel Processing Plant, and various auto dismantling operations.

The southern portion of the watershed, located south of the Tuxford-San Fernando intersection, is primarily developed with low to medium density residential uses. Some industrial uses, including an inert landfill (Strathern Pit), are located north of Strathern Street as well as near the Burbank-Glendale-Pasadena Airport (Burbank Airport), which is adjacent to the watershed on the east. Public facilities located in the southern portion include Sun Valley Park, Sun Valley Middle School, and Roscoe Elementary School.

Figure 4.5-1
Project Area Land Use Map



Source: LACDPW GIS Database (obtained from LACDPW in 2001).

4.5.1.2 Hazardous Materials

Section 65962.5 of the California Government Code requires the California Environmental Protection Agency to update a list of hazardous materials sites, which is also known as the "Cortese List." The Cortese List identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, reported leaking underground storage tanks (LUSTs), and solid waste disposal facilities from which there is known hazardous substance migration.

In accordance with the CEQA Statute (Section 21092.6 of the Public Resources Code), a records search was conducted by Environmental Data Resources, Inc. (EDR, 2002) for the project area to determine whether any of the proposed project sites is included in the Cortese List. The records search found that two project component sites, Sun Valley Middle School and Parking Lot on Sherman, are included in the Cortese list (**Table 4.5-1**).

Table 4.5-1
Proposed Project Sites Included in the Cortese List

Project Component / Site Name	Address Listed	Reason For Listing
Sun Valley Middle School	7330 Bakman Ave, Sun Valley	Leaking Underground Storage Tanks (Diesel) • Case Number: 913521843a (Status: Leak being confirmed; Review Date 2/24/00) • Case Number: 913521843 (Status: Case closed; Close Date 7/19/96)
Parking Lot on Sherman		
Site 1: Flight Accessory Services	11310 Sherman Way, Sun Valley	Leaking Underground Storage Tank (Solvents) • Case Number: 913522416 (Status: Not Reported; Review Date 1/20/00)
Site 2: Federated Industries Inc.	11428 Sherman Way, Sun Valley	Leaking Underground Storage Tank • Case Number: 916057089 (Status: Leak being confirmed; Report Date 12/14/1999)

Source: EDR, 2002.

Although not included on the Cortese List, the southern portion of the Valley Steam Plant property contains a set of railroad tracks, which likely consists of wooden railroad ties treated with coal tar creosote. Coal tar creosote is the most widely used wood preservative in the United States. It is produced by processing coal and contains a mixture of various hydrocarbons and other chemicals. The major chemicals in coal tar creosote that can cause harmful health effects are polycyclic aromatic hydrocarbons (PAHs), phenol, and cresols. EPA has classified creosote as a probable human carcinogen (EPA, 2003a). Wood products treated with creosote are required to be disposed of as hazardous wastes.

4.5.1.3 Bird/Wildlife Aircraft Strike Hazard

The project area is located within 2 miles of two public airports – Burbank-Glendale-Pasadena Airport (Burbank Airport) and Whiteman Airport. Whiteman Airport is operated by Los

Angeles County and is located approximately 1 mile to the northwest outside of the watershed. Burbank Airport is operated by a joint-powers authority consisting of cities of Burbank, Glendale and Pasadena. It is located just outside of the watershed boundary to the east. In addition, Van Nuys Airport is located approximately 6 miles from the western boundary of the watershed.

Aircraft collisions with birds and other wildlife can damage aircraft and pose a threat to human safety. According to the Federal Aviation Administration (FAA), the number of reported wildlife strikes involving civil aircraft in the past few years has been over 5,000 cases annually (FAA, 2002). Over 97 percent involved birds, and less than 3 percent of the cases involved mammals or reptiles. Gulls, doves, raptors, and waterfowl were the most frequently struck bird groups among the reported cases. The majority of the reported strikes occurred at lower altitudes, such as during take-off, climb, approach, or landing-roll.

In 1997, FAA issued an advisory circular (FAA, 1997) that provides guidance on locating land uses having the potential to attract hazardous wildlife (wildlife attractants) to or in the vicinity of public-use airports. Putrescible-waste (i.e., organic waste) disposal operations, wastewater treatment facilities, artificial marshes, and wetlands are considered potential wildlife attractants. FAA recommends the following minimum distances between these land uses and an airport's aircraft movement areas, loading ramps, or aircraft parking areas:

- Airports serving piston-powered aircraft: 5,000 feet
- Airports serving turbine-powered aircraft: 10,000 feet
- Approach or departure airspace: 5 miles, if the wildlife attractant may cause hazardous wildlife movement into or across the approach or departure airspace

EPA requires any operator proposing a new or expanded waste disposal operation within 5 statute miles of a runway end to notify the appropriate FAA Regional Airports Division Office and the airport operator of the proposal (40 CFR 258*, Criteria for Municipal Solid Waste Landfills*, section 258.10, *Airport Safety*). Although not legally required for other land use changes that do not involve landfills, FAA requests that similar notices be provided if a land use change proposed within the distances listed above has the potential to attract hazardous wildlife.

4.5.1.4 Mosquitoes

Uncontrolled populations of mosquitoes can pose a public health hazard. In California, there are several species of mosquitoes known to transmit agents that cause mosquito-borne diseases, such as western equine encephalomyelitis, St. Louis encephalitis, and malaria. Since the introduction of the West Nile virus into the Western Hemisphere in 1999, there has been rising public awareness of this mosquito-borne virus. In California, there has been one laboratory test result reported positive for the West Nile virus (CDC, 2003).

Mosquitoes require standing water to breed and complete the life cycle, which takes about 7 days during warm weather. If improperly managed, stormwater management facilities such as retention ponds and catch basins may become breeding sites for mosquitoes.

Mosquito control methods include elimination of potential breeding sources through water and vegetation management and use of biological and chemical insecticides. The primary biological control agent is mosquito fish (*Gambusia affinis*), a small, guppy-like fish that feeds on mosquito larvae. While the use of mosquito fish is an effective and safe method of mosquito control, they may disrupt the aquatic ecosystem if introduced into natural streams, lakes, or ponds. Chemical agents include *Bacillus thuringiensis* var. *israelensis* (Bti) and Methoprene, which are applied to water to kill larvae. Bti is a microbial toxin (bacteria) that affects the larva's digestive system. Methoprene is a synthetic insect growth regulator, which mimics naturally occurring hormones in mosquitoes and prevents the normal maturation of larvae. If the breeding source is active with pupae, the source can be treated with Agnique MMF, a chemical agent that forms a film on the water surface and suffocates the pupae or larvae. In situations where these control measures cannot be used or are ineffective in reducing the adult mosquito population, adulticides (chemical pesticides used to control adult mosquitoes) may be applied by spraying. A biological control method for adult mosquitoes is installation of nesting or roosting houses to attract insectivorous bats or birds that feed on adult mosquitoes.

Control of mosquitoes in the project area is under the jurisdiction of the Greater Los Angeles Vector Control District (GLAVCD). GLAVCD is one of the mosquito abatement/vector control districts, state agencies created under legal authorization of the California Health and Safety Code.

4.5.2 Significance Criteria

Project impacts related to hazards and hazardous materials would be considered significant if the project:

- Exposed the general public to hazardous situations through transport, use, storage, or disposal of hazardous materials
- Created wildlife habitat in a manner and amount that result in a substantial increase in the potential for aircraft collisions with birds and other wildlife
- Created mosquito breeding conditions in an amount that would require increased levels of mosquito abatement programs to maintain mosquito populations at pre-project levels

4.5.3 Impacts

4.5.3.1 Hazardous Materials

Construction in Areas of Potential Soil Contamination. As described in Section 4.5.1.2 above, two project components, the Sun Valley Middle School (all alternatives) and the Parking Lot on Sherman (Alternatives 1, 2, and 4), are located on sites that might contain contaminated soils due to past leaking underground storage tanks. The Sun Valley Middle School site may also contain contaminated soils due to the presence of a former landfill below the bus garage, which is located on the southwestern portion of the school property (C. Loftenius, pers. comm., 2004). In addition, due to the highly urbanized environment and the presence of industrial land uses in the project area, there is also potential for contaminated soils to be present at the other project component sites. If contaminated soils are encountered during project construction and are not recognized and not disposed of properly, this would be a potentially significant impact. However, incorporation of **Mitigation Measure H-1** would ensure that if contaminated soils are found in areas that would be disturbed by project construction, they would be disposed of in compliance with applicable regulations at approved disposal sites. The impact would then be less than significant.

Potential Removal of Railroad Tracks at Valley Steam Plant. The Valley Steam Plant component (all alternatives) involves construction of retention basins within the plant property. A set of railroad tracks is located in the southern portion of the plant property. If the proposed retention basins are sited in this area, the railroad tracks would need to be removed prior to construction of the basins. The railroad ties are likely treated with creosote, a probable carcinogen. If the railroad tracks need to be removed as a part of the project, they would be disposed as hazardous waste in compliance with applicable regulations at approved disposal sites. This impact would be less than significant.

Stormwater Disinfection. Stormwater collected by the proposed facilities would be disinfected to meet Title 22 standards for bacteria before being reused for irrigation or other uses with the potential for public contact. (See Section 4.7 for additional information on Title 22 standards.) Body contact recreation is not an intended use of the lakes proposed for the Strathern Pit and Cal Mat Pit components. It is anticipated that Ultraviolet (UV) irradiation or sodium hypochlorite would be used for disinfection. UV disinfection does not involve use of hazardous materials and would have a beneficial impact on public health and safety.

Liquid sodium hypochlorite, a concentrated form of household bleach, can be generated onsite using salt, water, and electricity or may be delivered periodically. Sodium hypochlorite is a commonly used chemical and does not pose substantial risks to public health and safety if handled and stored properly. Impacts associated with handling and use of sodium hypochlorite would be less than significant.

Disposal of Sediments Removed for Maintenance of Stormwater Treatment Facilities. The proposed project involves periodic removal of sediments from stormwater retention basins, catch basins, and other stormwater management facilities. Sediments removed from stormwater management facilities can contain hazardous contaminants, such as heavy metals and organics that might be present in the influent runoff. Sediments removed from project facilities will be disposed of properly in accordance with applicable regulations at approved disposal sites. Transport or disposal of stormwater sediments would not create a significant hazard to the public or the environment. This impact is less than significant.

Herbicide Use on Landscaped Areas. Depending on landscaping plans and goals, herbicide use may be necessary for operation and maintenance of proposed landscaped areas. Chemical use will be limited to currently approved herbicides. Application of herbicides will be conducted in accordance with manufacturers' recommendations and general standards of use, e.g., restricted application before and during rain storms. This impact is less than significant.

4.5.3.2 Bird/Wildlife Aircraft Strike Hazard

Some of the proposed stormwater management facilities provide opportunities to create wildlife habitat areas within the Sun Valley Watershed. The greatest potential for creation of wildlife habitat exists at the project components involving the gravel pits (i.e., Sheldon Pit, Cal Mat Pit, and Strathern Pit). At Cal Mat Pit and Strathern Pit, lakes with a permanent pool of water are proposed as a part of the stormwater retention facility. At Sheldon Pit and Strathern Pit, wetlands are proposed for stormwater treatment. These surface water features have the potential to attract wildlife, particularly waterfowl. This is considered a beneficial impact on biological resources (see Section 4.2).

However, if these features attracted a large number of birds and other wildlife and substantially increased the potential for collisions between wildlife and aircraft, the project would have an adverse effect on airport safety. Since there are no project component sites located adjacent to either of the two nearby airports (i.e., Burbank Airport and Whiteman Airport), wildlife other than birds is not of concern for the project. With respect to birds, the water features proposed at Sheldon Pit, Strathern Pit, and Cal Mat Pit may attract waterfowl and other birds, potentially increasing the diversity of bird species in the project area. However, due to the highly urbanized nature of the project area and the continuing influence of human activity, a substantial increase in waterfowl population is not anticipated. Therefore, the project would not result in a substantial increase in the potential for bird/wildlife aircraft strike hazard. This would be a less than significant impact on airport safety.

Since the proposed facilities with the potential to attract birds are located within 5 miles of Burbank Airport and Whiteman Airport, **Mitigation Measure H-2** (notification of FAA and airport operators) is proposed to further reduce this impact in accordance with FAA recommendations. Note, notification is not legally required but recommended for the types of land use changes proposed under the project (see **Section 4.5.1.3** above).

4.5.3.3 Mosquitoes

The proposed project involves construction of uncovered stormwater retention facilities that vary in size and operating conditions. Below is a description of each type of facility and its potential for creating mosquito-breeding conditions.

Catch Basins. Catch basins will be constructed in streets surrounding the project components to collect and convey runoff from street surfaces to the project components. Catch basins will be designed so that runoff would flow into the downstream facilities without ponding. As part of regular maintenance, catch basins will be cleaned to remove leaves, sediments, and other debris. However, during the storm season, catch basins may temporarily contain stagnant water if they become clogged and are not cleaned out prior to the next rainfall event. Therefore, catch basins have some limited potential to create mosquito-breeding conditions.

Shallow depressions for infiltrating stormwater. Project components that include shallow depressions for infiltrating stormwater are New Park on Wentworth, Roscoe Elementary School, Stonehurst Elementary School, Stonehurst Park, and Sun Valley Middle School. This type of facility consists of a grassy surface (several acres in area) that is excavated and graded to create a shallow depression of several feet. During large storms, water would temporarily pond in the depressed area, but is expected to completely infiltrate into the ground within two days of any storm event. In addition, stormwater would be present primarily in winter, when mosquitoes are less active. Therefore, the mosquito breeding potential at this type of facility is low.

Retention Basins. Project components that include retention basins are Cal Mat Pit (Phase I and Interim Phase – 20 acres), Power Line Easement (16 acres), Valley Steam Plant (10 acres), and Vulcan Gravel Processing Plant (6 acres). Under most conditions, these basins would be dry since stormwater collected in the basins would be infiltrated or transferred to a reuse location. In addition, stormwater would be present primarily in winter, when mosquitoes are less active. However, in the event of a large storm (e.g., a 50-year frequency storm), water may remain in the basins for several months. Therefore, the basins have some potential for mosquito breeding under such conditions.

Stormwater Wetlands. Project components that include stormwater wetlands are Strathern Pit (up to 17 acres of wetlands) and Sheldon Pit (30 acres of wetlands). Water in the wetlands will be continuously circulated using a pump. However, in some areas, water may become stagnant for extended periods due to the presence of wetland vegetation. Therefore, stormwater wetlands have some potential to create mosquito-breeding conditions.

Permanent Lakes. Project components that include lakes are Cal Mat Pit (15 acres) and Strathern Pit (1 acre). Mosquitoes generally prefer shallow water for breeding since it tends to be more stagnant. Although wind action on the water surface will discourage egg-laying to some extent, the proposed lakes have the potential to create mosquito-breeding conditions, particularly in the perimeter area where shallow and more stagnant water is expected to occur.

As described above, some of the proposed facilities would create potential mosquito breeding conditions. Considering the proximity of the proposed facilities to residences and the potential spread of the West Nile Virus to the Southern California region, this is a potentially significant impact on public health. LACDPW will coordinate with the GLAVCD to determine the appropriate mosquito control measures. Potential control measures include: vegetation management (minimize vegetation on bank slopes to reduce habitat and maintain wave action), stocking with mosquito fish, application of Bti or other larvicides, application of adulticides (if necessary), and installation of nesting or roosting boxes to attract insectivorous bats and/or birds. With incorporation of **Mitigation Measure H-3**, project impacts on public health due to mosquitoes and mosquito-borne diseases would be less than significant.

4.5.3.4 Site Security and Safety

If any new parks are constructed directly adjacent to Southern California Regional Rail Authority's (SCRRA) rail rights-of-way, protective barriers to separate the park from the rail right-of-way would be incorporated into the project design. The project components at school sites do not include creation of ponds or wetlands. If modifications proposed at school sites would result in standing water, these areas will be fenced or otherwise secured. Project impacts on site security and safety would be less than significant.

4.5.3.5 Impact by Alternative

As described above, issues of concern for the project with respect to hazards and hazardous materials are disposal of known or potentially hazardous materials (i.e., contaminated soils, creosote-soaked railroad ties, and sediments), bird/wildlife aircraft strike hazard, and increase in mosquitoes.

With respect to hazardous materials, the theoretical worst-case alternative is defined as the alternative that would involve all proposed project components. Although the site-specific potential for soil contamination cannot be quantified at this time, the four County-defined alternatives are expected to be similar in terms of disposal of hazardous materials during construction. For operation of the project, Alternatives 1, 2, and 3 would result in greater amounts of (potentially contaminated) sediments to be removed from the proposed facilities compared to Alternative 4, since they have larger stormwater retention capacities than Alternative 4.

For bird/wildlife aircraft strike hazard, the theoretical worst-case alternative is defined as the alternative that would involve all of the following project components: Cal Mat Pit, Sheldon Pit, and Strathern Pit. Among the County-defined alternatives, Alternatives 2, 3, and 4 would result in greater potential for increase in waterfowl population compared to Alternative 1 since Alternative 1 would result in a smaller acreage of wetlands and other permanent water features.

With respect to mosquitoes, the theoretical worst-case alternative is defined as the alternative that would involve all of the following project components: Cal Mat Pit, Power Line Easement, Valley Steam Plant, Vulcan Gravel Processing Plant, Strathern Pit, and Sheldon Pit. Among the County-defined alternatives, Alternatives 2, 3, and 4 would result in greater potential for increase in mosquito population compared to Alternative 1 since Alternative 1 would result in a smaller acreage of potential mosquito breeding habitat overall.

Under all alternatives, impacts related to hazardous materials and mosquitoes would be less than significant with incorporation of the mitigation measures described below. Under all alternatives, impacts related to bird/wildlife aircraft strike hazard are less than significant.

4.5.4 Mitigation Measures

Hazardous Materials.

H-1 During the detailed design phase of each project component (except Onsite BMPs, Tree Planting & Mulching, and Storm Drains), a Phase I Environmental Site Assessment (ESA) will be conducted to determine the site-specific potential for soil contamination. The Phase I ESA will be conducted in accordance with the latest version of the American Society of Testing and Materials (ASTM) 1527 “Standard Practice for Environmental Site Assessments: Phase I Environmental Assessment Process.” This document outlines the customary practice for performing ESA’s in the United States. Phase I ESA will consist of a review of site-specific documents and historical maps to determine past uses of the site, a site visit to visually inspect the property for signs of potential environmental contamination, and investigation of state and federal environmental regulatory databases (including those maintained by Regional Water Quality Control Board and Department of Toxic Substances Control) to identify recognized hazardous materials usage or spills. For project sites with infiltration, the boundary of the Phase I ESA will include parcels located within 500 feet of the project site boundary to identify active or abandoned landfills or other land uses with the potential for contaminated soils which would be incompatible with infiltration (to be cross-referenced with Mitigation Measure W-4; see Section 4.7.7). If the Phase I ESA concludes that there is no substantial potential for soil contamination, no further action would be required. If the Phase I ESA indicates that there is potential for soil to be contaminated, additional investigation (including soil sampling and analysis) will be conducted to determine the presence and extent of the contamination. If the proposed project would involve disturbance of soil in the contaminated area, soil would be removed and disposed of in compliance with applicable regulations at approved disposal sites.

Bird/Wildlife Aircraft Strike Hazard.

H-2 During the detailed design phase of Sheldon Pit, Cal Mat Pit, and Strathern Pit, FAA Western Pacific Regional Office, Burbank Airport, and Whiteman Airport will be notified of the proposed land use change.

Stormwater Disinfection. None required.

Mosquitoes. The following mitigation measure will be employed to minimize project impacts on public health from potential increases in mosquito breeding habitat:

H-3 LACDPW, or subsequent operator of the project component (if different), will consult and coordinate with the Greater Los Angeles Vector Control District (GLAVCD) during the detailed design, implementation, and operation phases of the following project components: Sheldon Pit, Strathern Pit, Cal Mat Pit, Power Line Easement, Valley Steam Plant, and Vulcan Gravel Processing Plant. Consultation and coordination with GLAVCD shall include the following actions:

- Consult with GLAVCD during the detailed design phase to incorporate design elements intended to minimize the mosquito production potential of the project component(s).
- Regularly consult with GLAVCD to identify mosquito management problems, mosquito monitoring and abatement procedures, and opportunities to adjust water and vegetation management practices to reduce mosquito production. Mosquito control measures to be used by GLAVCD could include mosquito fish stocking, and application of Bti, Methoprene, and/or Agnique MMF, as appropriate.

4.5.5 Future Analyses

During the detailed design phase of each project component (except Onsite BMPs, Tree Planting & Mulching, and Storm Drains), a Phase I Environmental Site Assessment (ESA) will be conducted to determine the site-specific potential for soil contamination. Phase I ESA will consist of a review of site-specific documents and historical maps to determine past uses of the site, a site visit to visually inspect the property for signs of potential environmental contamination, and investigation of state and federal environmental regulatory databases to identify recognized hazardous material usage or spills. If the Phase I ESA indicates that there is potential for soil to be contaminated, additional investigation (including soil sampling and analysis) will be conducted to determine the presence and extent of the contamination.

4.6 HYDROLOGY (DRAINAGE AND FLOODING)

4.6.1 Existing Setting

The proposed project area is in the Sun Valley Watershed, an urban watershed that drains into the Los Angeles River. The watershed is located in the northeastern portion of the San Fernando Valley, about 14 miles northwest of downtown Los Angeles. It is approximately 2,800 acres (4.4 square miles) in size, and is approximately 6 miles in length from north to south. In general, the Sun Valley Watershed is bordered by Tujunga Wash on the west, Burbank-Glendale-Pasadena Airport on the east, Hansen Dam on the north and Burbank Boulevard on the south.

4.6.1.1 Precipitation

The regional climate of the project area is classified as Mediterranean, characterized by warm summers and mild winters. More than 90 percent of area's rainfall occurs from November through April. Monthly and yearly rainfall totals are extremely variable. Annual average precipitation in the project area (San Fernando Valley) is 17.6 inches (LACDPW, 2002).

For purposes of designing flood control facilities, the magnitude and expected frequency of a storm are described using the term "design storm." A design storm describes a storm of a particular magnitude associated with a specified probability of occurrence. For example, a 50-year frequency storm refers to a rainfall event which, statistically, is expected to occur once in any given 50-year period. Another way to describe the 50-year frequency storm is that it has a 1 in 50 (2 percent) chance of occurring in any given year. Similarly, a 10-year frequency storm has a 1 in 10 (10 percent) chance of occurring in any given year.

[Note: The design storm is determined based on statistical analysis of past rainfall records, and describes the probability of a storm event. A 50-year frequency storm does not mean that it will occur regularly once every 50 years. More than one or no "50-year frequency storm" may occur within any given 50-year period.]

The magnitudes of rainfall associated with various design storms in the project area are shown in **Table 4.6-1** below. Based on a historical record of major storms observed in the Los Angeles region, LACDPW defines design storms to be rainfall events that occur over a period of four days, with the maximum rainfall falling on the fourth day.

Table 4.6-1
Magnitude of Design Storms for the Project Area

Design Storm	Probability	Rainfall Over a Four-day Period
50-year	2 %	14.8 inches
10-year	10 %	10.6 inches

Source: LACDPW, 1991.

4.6.1.2 Drainage Pattern and Runoff

The watershed has a moderate slope with drainage flowing in a southerly direction. Based on the drainage pattern, the watershed is divided into 8 subwatersheds, numbered 1 through 8 from upstream (north) to downstream (south). The northern portion of the watershed, located north of the Tuxford-San Fernando intersection, includes subwatersheds 1 through 4. The southern portion, located south of the Tuxford-San Fernando intersection, includes subwatersheds 5 through 8 (**Figure 4.6-1**).

The watershed has two sumps (natural depressions or low points) at the following locations (**Figure 4.6-1**):

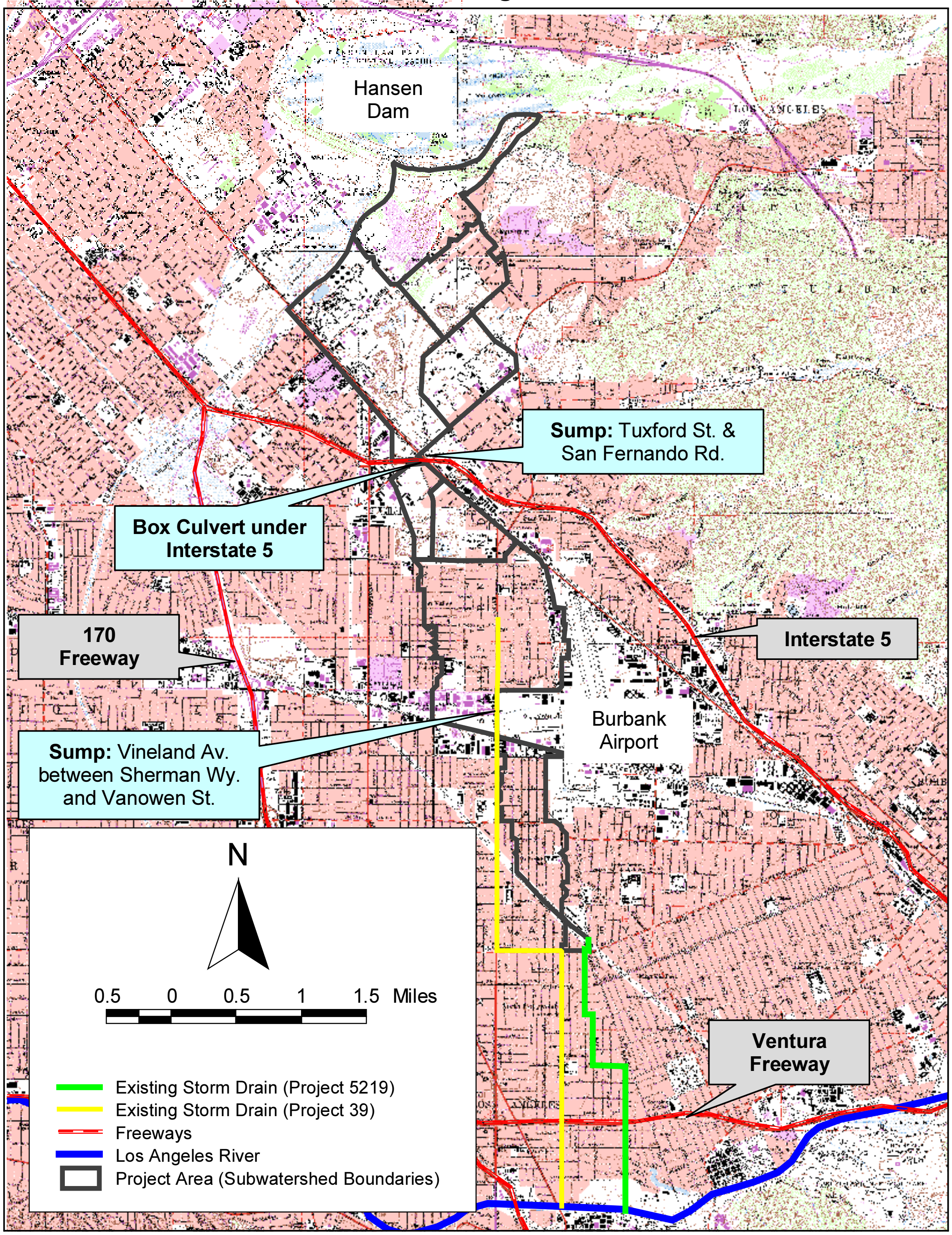
- Intersection of San Fernando Road and Tuxford Street
- On Vineland Avenue and between Sherman Way and Vanowen Street

The watershed currently lacks any comprehensive underground storm drain system, and therefore stormwater is conveyed on street surfaces. Existing drainage facilities serving the watershed are listed in **Table 4.6-2**. In the northern portion of the watershed, runoff carried by the streets collects in the sump at the intersection of Tuxford Street and San Fernando Road. As a result, flooding occurs at this intersection even with light or moderate rainfall. Once the intersection is flooded above the curb level, water begins to enter a box culvert under Interstate 5 (I-5) on the southern corner of the intersection. The box culvert channels runoff from the intersection, passes it under I-5, and discharges it on the south side to the north end of Tujunga Avenue, entering the southern portion of the watershed.

In the southern portion, runoff travels on street surfaces then ultimately exits the watershed through two storm drains – Project 39 and Project 5219 (**Figure 4.6-1**). Project 5219 has a capacity of 2,510 cfs. (The storm drains proposed for Alternatives 2 and 4 would connect to Project 5219.) Project 39 has less than a 3-year frequency level of protection. Since both are located towards the southern end of the watershed, they provide little flood control benefit for the watershed. Both storm drains ultimately drain into the Los Angeles River a few miles to the south.

Based on existing land use types and the associated amounts of impervious surfaces (e.g., paved areas and rooftops), it is estimated that approximately 66 percent of rainfall in the watershed becomes runoff. Under existing conditions, the peak flow rate at the outlet of the watershed (i.e., Project 5219 storm drain) during a Capital Storm (50-year frequency, 96-hour storm) is 2,096 cfs.

Figure 4.6-1
Existing Drainage Facilities



Source: LACDPW, 1998

Table 4.6-2
Existing Drainage Facilities Serving Sun Valley Watershed

Facility	Description
Box Culvert under Interstate 5	A rectangular concrete pipe (7.5 feet wide and 2.5 feet high) that passes flow under Interstate 5 from the Tuxford-San Fernando intersection to the north end of Tujunga Avenue
Project No. 5219	A storm drain extending from an inlet at the intersection of Clybourn Avenue and Whitnall Highway to an outlet at the Los Angeles River
Project No. 39	A storm drain extending from an inlet at the intersection of Saticoy Street and Vineland Avenue to an outlet at the Los Angeles River

4.6.2 Regulatory Setting

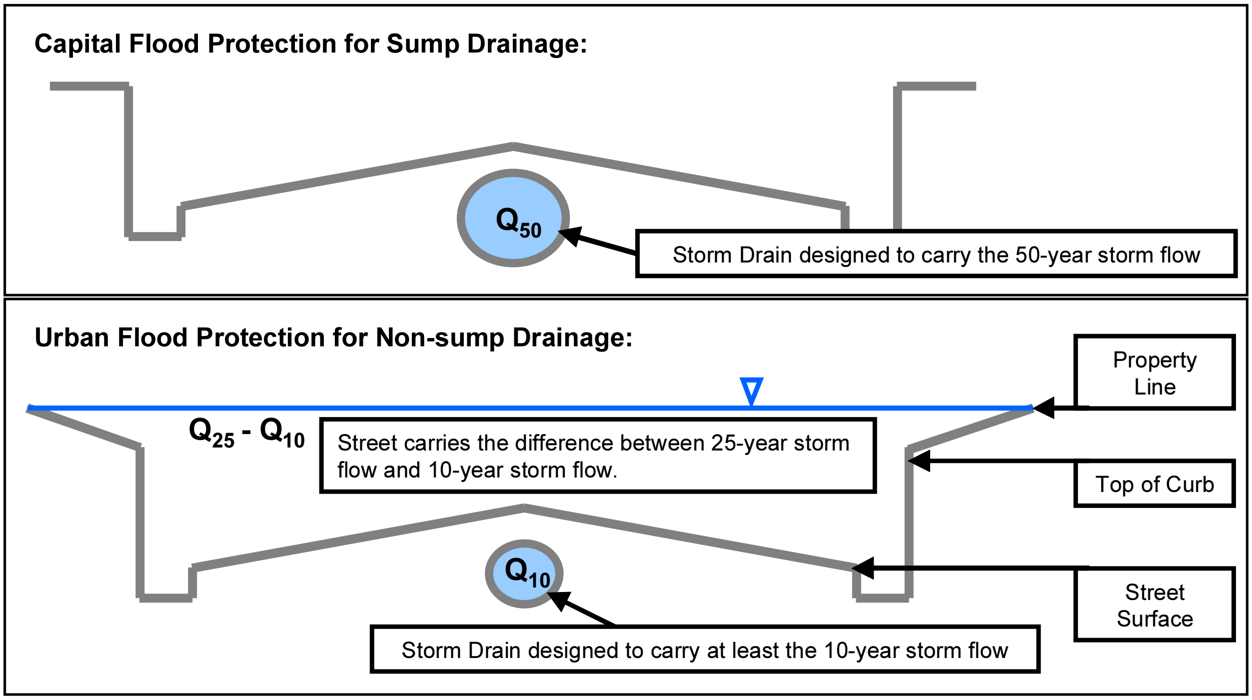
4.6.2.1 County Flood Control Standard

The County of Los Angeles Department of Public Works (LACDPW) is the agency responsible for flood control in the project area. **Figure 4.6-2** is a graphical representation of LACDPW's flood control standard as described in the County Hydrology Manual (LACDPW, 1991). There are two levels of flood protection identified in the Manual: Capital Flood Protection and Urban Flood Protection.

The Capital Flood Protection standard requires all flood control facilities that drain sumps to be designed to convey up to the Capital Flood, which is defined as runoff generated from a **four-day, 50-year frequency storm** falling on a saturated watershed. As described in Section 4.6.1.2, the two sumps in the Sun Valley Watershed are located at: 1) the intersection of San Fernando Avenue and Tuxford Street, and 2) on Vineland Avenue and between Sherman Way and Vanowen Street.

The Urban Flood Protection standard applies to flood control facilities constructed in non-sump areas. It requires that the combined capacity of the street and the storm drain carry up to the Urban Flood, which is defined as runoff from a **four-day, 25-year frequency storm** falling on a saturated watershed. Specifically, runoff is to be conveyed by the street to the point where the flow reaches the street capacity at the property line. At this point, the standard requires that a storm drain be constructed to carry some of the flow, so that the flow is conveyed by both the street and the storm drain. The storm drain must have the capacity to carry the flow from at least the 10-year frequency storm, and the street or highway must have enough capacity up to the property line to convey at least the balance of the Urban Flood.

Figure 4.6-2
Los Angeles County Flood Control Criteria



Source: Adapted from the County Hydrology Manual (LACDPW, 1991).
Q = Discharge

4.6.2.2 Department of Water Resources Division of Safety of Dams

Construction of dams, as defined in the California Water Code, is subject to approval by the California Department of Water Resources (DWR) Division of Safety of Dams (DSOD). Dams are defined as structures that are 25 feet or higher from the lowest point at the downstream toe with a reservoir storage capacity of more than 15 acre-feet, or higher than 6 feet with a storage capacity of 50 acre-feet or more (California Water Code, Sections 6002 and 6003). Prior to construction of dams within the jurisdiction of the DWR, plans and specifications must be filed with the DSOD. All dam safety related issues must be resolved prior to approval of the application, and the work must be performed under the supervision of a civil engineer registered in California (S. Verigin, pers. comm., 2002).

4.6.3 Significance Criteria

Project impacts related to hydrology would be considered significant if the project:

- Exposed people or structures to a significant risk of loss, injury or death involving flooding
- Increased runoff volume to a level which could exceed the capacity of existing or planned stormwater drainage systems

LACDPW has established flood control standards that apply to changes in runoff volume or drainage pattern resulting from new development. However, these standards do not apply to the proposed project since the proposed project is specifically designed to reduce flooding and does not involve new development.

4.6.4 Proposed Flood Control Approach

The primary objective of the project is improved flood control in the Sun Valley Watershed. The project proposes a combination of retention facilities and conveyance systems in order to reduce the amount of runoff flowing in the streets and contributing to area flooding problems. This section describes the criteria and methodology used in determining the design of proposed flood control facilities, and presents a comparative analysis of the flood control benefits of the four alternatives of the Watershed Management Plan.

4.6.4.1 Project Design Criteria for Flood Control

Each of the four Watershed Management Plan alternatives proposes a combination of stormwater retention and conveyance systems to meet the County flood control standard described above. The flood control criteria used to design the retention facilities and conveyance systems vary among alternatives. The larger retention facilities (i.e., all except Onsite BMPs) were designed for the 50-year frequency storm or 10-year frequency storm, depending on the alternative (see **Table 4.6-3**). The Onsite BMPs were sized for the 2-year frequency storm, except in Alternative 3. The preliminary storm drain plans presented in the Watershed Management Plan were designed to meet the County flood control standards. Note, these are concept-level designs only. Detailed designs to be completed for each project component will consider site-specific conditions such as individual street capacities.

Table 4.6-3
Summary of Flood Control Design Criteria for each Alternative

Alternative	Regional Retention Facilities	Onsite BMPs	Conveyance Systems	
			Storm Drains to Retention Facilities	Storm Drains for Draining Sumps
1	50-year, 96-hour storm	2-year, 96-hour storm	10-year peak flow	50-year peak flow
2	50-year, 96-hour storm in subwatersheds 1 - 6; 10-year, 96-hour storm in subwatersheds 7 & 8	2-year, 96-hour storm	10-year peak flow	50-year peak flow
3	50-year, 96-hour storm	50-year, 96-hour storm	10-year peak flow	50-year peak flow
4	10-year, 96-hour storm	2-year, 96-hour storm	10-year peak flow	50-year peak flow

4.6.4.2 Flood Control Design Methodology

To calculate the sizes of the retention facilities and conveyance systems required to meet the design criteria described above, LACDPW's hydrologic modeling program, F0601, was used. The F0601 program, which has a Watershed Modeling System (WMS) graphical interface, uses a modified rational method to simulate runoff. LACDPW's Geographic Information System (GIS) database was used to support the development of the F0601 model.

The model was used to determine the proper retention volumes for each project component, calculate peak flow rates in key locations throughout the watershed, and size the conveyance system required for subsurface flow routing in each alternative. The model was run using inputs for a Capital Flood (a 50-year frequency, 96-hour storm) as well as an Urban Flood (25-year frequency, 96-hour storm). For more details on the hydrologic model, readers are referred to the Technical Memorandum No. 5. (See **Section 2.9** for availability of the technical memoranda and other related documents.)

4.6.5 Impacts

4.6.5.1 Local Flooding

Flood control is the primary objective of the proposed project. The flood control benefits of the proposed project are described in terms of runoff retention capacity (how much stormwater would be retained by various project components) and reduction in peak flow rates (reduction in the maximum rate of flow during a storm at a particular location).

Construction of the proposed retention facilities would substantially reduce the amount of runoff that flows into the streets and contributes to flooding. **Table 4.6-4** presents the flood control capacities of individual project components as well as the total capacity for each alternative. Alternatives 1, 2, and 3 would each provide approximately 1,900 acre-feet of additional runoff retention capacity. Alternative 4 would provide 1,300 acre-feet of runoff retention capacity, somewhat less than the other three alternatives. This is because all the regional retention facilities in Alternative 4 are designed for the 10-year frequency storm instead of the 50-year frequency storm.

Table 4.6-4
Flood Control Capacities of Project Components per Alternative
(acre-feet)

Project Component	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Storm Drains	N/A	N/A	N/A	N/A
Valley Steam Plant	234	234	234	139
Vulcan Gravel Processing Plant*	65	66	67	36
Tuxford Green	N/A	N/A	N/A	N/A
Sun Valley Park*	49	48	48	48
Sun Valley Middle School	35	35	35	20
Tree Planting and Mulching	~0	~0	~0	~0
Stonehurst Elementary School	7	---	---	---
Stonehurst Park	16	---	---	---
Roscoe Elementary School	5	---	---	---
Park on Wentworth	8	---	---	---
Parking Lot Infiltration	129	52	---	80
Sheldon Pit Total	---	699	---	---
Runoff from Tributary Area	---	199	---	---
Tujunga Wash Diversion	---	500	---	---
Cal Mat Pit	---	---	270	175
Strathern Pit	736	569	499	363
Street Storage	62	38	276	38
Onsite BMPs	75	38	75	38
Power Line Easement	455	170	381	350
Total	**1,876**	**1,949**	**1,885**	**1,287**

~0 Negligible
--- Project component is not included in the alternative.
N/A Project component provides runoff conveyance only (no retention).
* Minor differences (i.e., less than 2 acre-feet) in flood control capacities between different alternatives are due to numerical approximations associated with the hydrologic model.

Table 4.6-5 presents the peak flow rates at key locations throughout the watershed calculated by the hydrologic model for each Watershed Management Plan alternative. In general, implementation of Alternative 4 would result in a smaller reduction in peak flows compared to the other three alternatives. This is because retention facilities in Alternative 4 are designed for the 10-year frequency storm whereas the other three alternatives are designed for the 50-year frequency storm. The primary differences between Alternatives 1, 2, and 3 are the reductions in peak flows in the upstream areas. Implementation of Alternative 2 would virtually eliminate surface flows flowing downstream from the Glenoaks-Sheldon intersection, since all of the flow upstream of this location would be diverted into Sheldon Pit. Alternatives 1 and 3 would result in greater reductions of surface flows at the Glenoaks-Peoria intersection than Alternative 2 due to the inclusion of project components located upstream of this location.

Table 4.6-5
Peak Flow Rates at Key Locations During a Capital Storm (North to South)
(cubic feet per second)

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Glenoaks Blvd. & Sheldon St.	329	0	332	332
Glenoaks Blvd. & Peoria St.	55	287	60	57
San Fernando Rd. & Sheldon St.	0	0	0	370
San Fernando Rd. upstream of Tuxford St.	211	211	211	547
Tuxford St. upstream of San Fernando Rd.	752	558	630	723
San Fernando Rd. & Tuxford St.	1,020	844	878	1,336
Tujunga Av. & Strathern St.	1,082	914	925	1,387
Vineland Av. & Vanowen St.	795	818	766	1,837
Clybourn Av. & Victory Blvd.	927	958	903	1,901
Outflow from Power Line Easement	0	971	0	1,802

4.6.5.2 Downstream Flooding

Under existing conditions, the peak flow rate at the outlet point of the watershed during a Capital Storm is 2,096 cfs. This represents the current contribution of Sun Valley Watershed to flooding in downstream areas of the Los Angeles River Watershed. **Table 4.6-6** presents the peak flow rates exiting the watershed during a Capital Storm after project implementation for each alternative. All alternatives would result in reduction of peak flow rates entering the Los Angeles River, and would therefore have a beneficial impact on downstream flooding. The capacity of the existing storm drain at the downstream end of the watershed (Project 5219) is 2,510 cfs, which is sufficient to convey the peak flow rates that would result from the proposed project. New storm drains proposed for the project would not connect to the other existing storm drain, Project 39. The project would have a beneficial impact on the capacity of Project 39 since the proposed retention facilities located upstream would reduce the amount of flows entering Project 39 under existing conditions.

Table 4.6-6
Reduction in Capital Storm Peak Flow Rates Compared to Existing Conditions
(cubic feet per second)

Parameter	Alternative			
	1	2	3	4
Outflow from the watershed under existing conditions	2,096	2,096	2,096	2,096
Reduction in peak flow by proposed facilities	–2,052	–1,118	–2,054	–285
Outflow from the watershed with project implementation	44	978	42	1,811

In Alternatives 2 and 4, there is a higher peak flow exiting the watershed compared to Alternatives 1 and 3. Alternatives 2 and 4 have been designed to release flow from the watershed outlet during Capital Storms. In Alternative 2, however, the water transfer from Tujunga Wash into Sheldon Pit allows for flow to exit Sun Valley without a net positive flow to the Los Angeles River. Alternative 4 has a higher peak flow rate than the other three alternatives because it is designed to retain only the 10-year frequency storm. However, implementation of

Alternative 4 would still result in a reduction in downstream flooding compared to existing conditions. All four alternatives would result in beneficial impacts with respect to downstream and local flooding.

4.6.5.3 Dam Safety

The following project components would involve construction of structures (i.e., berms) that may be considered dams under the jurisdiction of the DSOD:

- Strathern Pit (all alternatives)
- Cal Mat Pit (Alternatives 3 and 4)
- Sheldon Pit (Alternative 2)
- Valley Steam Plant (all alternatives)
- Vulcan Gravel Processing Plant (all alternatives)
- Power Line Easement (all alternatives)

During detailed design of these project components, LACDPW would determine whether each proposed structure would be jurisdictional according to DSOD criteria. If structures were determined to be jurisdictional, LACDPW would file the plans and specifications with DSOD and consult with DSOD staff regarding any dam safety related issues. With consultation and incorporation of any design recommendations from the DSOD, project impacts related to dam safety would be less than significant.

4.6.5.4 Impact by Alternative

By reducing local and downstream flooding, all alternatives of the proposed project would have beneficial impacts related to hydrology and drainage. Among the four County-defined alternatives, Alternatives 1, 2, and 3 would have greater beneficial impacts on flooding compared to Alternative 4, which is designed to retain up to the 10-year frequency storm instead of the 50-year frequency storm.

With respect to dam safety, Alternative 1 would require less coordination with DSOD than Alternatives 2, 3, and 4 since it includes only four of the six project components involving berms that may be considered DSOD jurisdictional dams.

4.6.6 Mitigation Measures

None required.

4.6.7 Future Analyses

Dam Safety. During detailed design of the project components listed in Section 4.6.5.3, LACDPW would determine whether the proposed berm structures would be considered jurisdictional dams by the DSOD. If structures were determined to be jurisdictional, LACDPW would file the plans and specifications with the DSOD and consult with DSOD staff regarding any dam safety related issues. The results of the consultations would be incorporated into the final design.

4.7 HYDROLOGY (SURFACE AND GROUND WATER QUALITY)

4.7.1 Existing Setting – Surface Water

The proposed project area is the Sun Valley Watershed, an urban watershed that drains into the Los Angeles River (**Figure 4.7-1**). The watershed is located in the northeastern portion of the San Fernando Valley, about 14 miles northwest of downtown Los Angeles. It is approximately 2,800 acres (4.4 square miles) in size, and is approximately 6 miles in length from north to south. Sun Valley Watershed is bordered approximately by Tujunga Wash on the west, Burbank-Glendale-Pasadena Airport (Burbank Airport) on the east, Hansen Dam on the north, and Burbank Boulevard on the south.

4.7.1.1 Surface Water Bodies

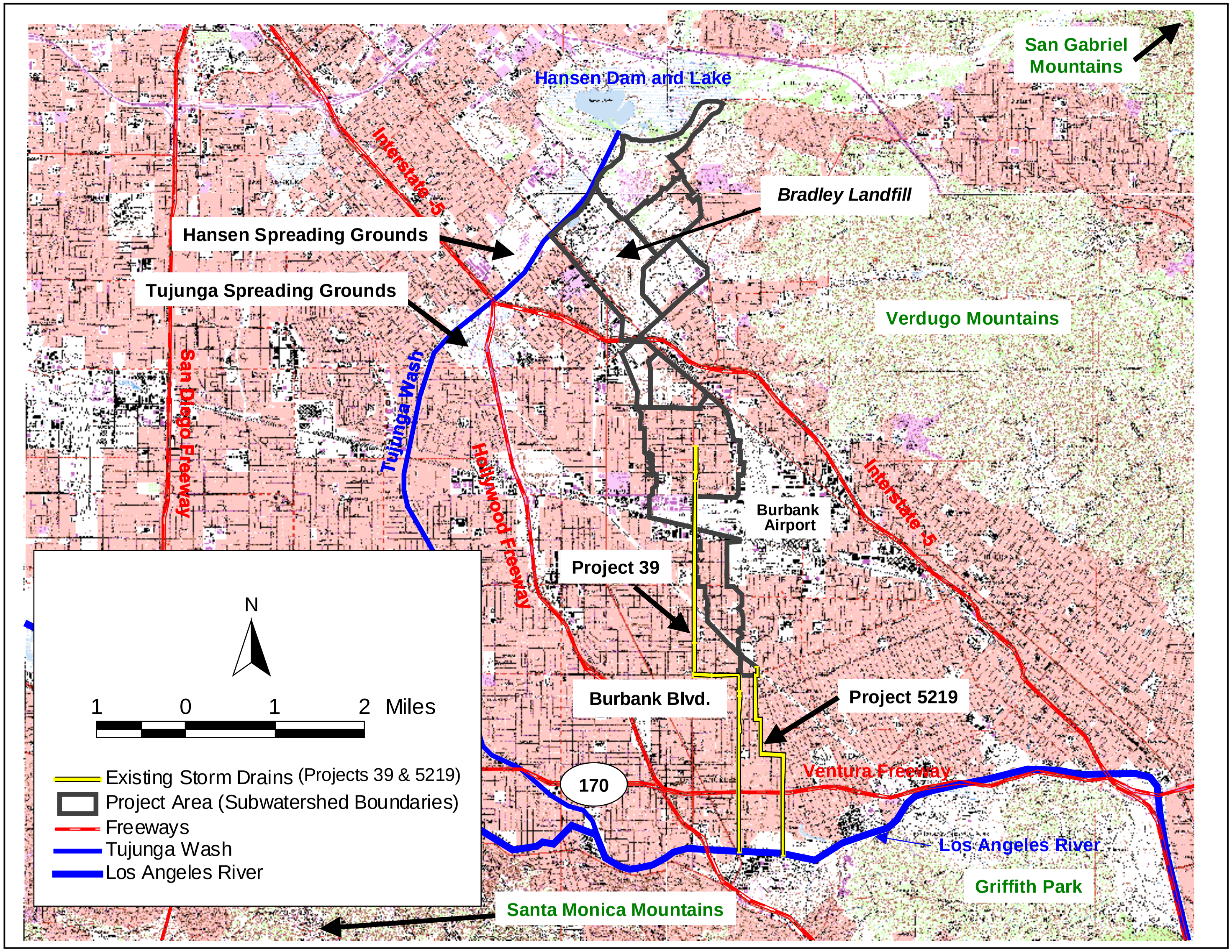
No major surface water bodies exist within the boundaries of the project area. Major surface water features in the vicinity include the Los Angeles River, Tujunga Wash, and Hansen Dam and Lake (**Figure 4.7-1**).

The **Los Angeles River** is located approximately 2 miles south of the southern end of the Sun Valley Watershed. The river originates in the Santa Monica, Santa Susana, and San Gabriel Mountains and flows eastward through the San Fernando Valley, then turns southward through the Glendale Narrows, flowing across the coastal plain and into San Pedro Bay near Long Beach. Over 90 percent of the 51-mile-long channel is lined with concrete (either on the sides or on the sides and the bottom). The Los Angeles River Watershed covers a land area of over 834 square miles, and is located almost entirely within Los Angeles County. There are eight major tributaries to the Los Angeles River, including the Tujunga Wash.

Tujunga Wash is tributary to the Los Angeles River. It abuts the northwestern portion of the Sun Valley Watershed as it flows south from Hansen Dam flanked by Hansen and Tujunga Spreading Grounds and the LADWP Valley Steam Plant. Downstream of the Hansen Dam, the channel of Tujunga Wash has been lined with concrete for flood control purposes. Upstream, unlined portions of the channel are included as part of LACDPW's Big Tujunga Wash Mitigation Bank. This project focuses on exotic vegetation removal, native habitat restoration and exotic fish and predatory amphibians eradication.

Hansen Dam is a flood control facility managed by the U.S. Army Corps of Engineers. The purpose of the dam is to control the flow of the Little and Big Tujunga Washes downstream into the Los Angeles River. The area behind the dam is operated by the City of Los Angeles Department of Recreation and Parks as a recreational facility, which includes a swimming lake, a fishing lake and several soccer fields.

Figure 4.7-1
Surface Water Features



4.7.1.2 Beneficial Uses and Water Quality Objectives

The project area lies within the boundaries of the California Regional Water Quality Control Board, Los Angeles Region (Regional Board or LARWQCB) jurisdiction. The Regional Board prepares the Water Quality Control Plan (called Basin Plan) for the Los Angeles Region. The Basin Plan identifies the beneficial uses of waters that should be protected, establishes water quality objectives to protect those uses (limits or levels of water constituents based on state and federal laws), and defines an implementation program to meet water quality objectives.

Table 4.7-1 summarizes the designated beneficial uses of the Los Angeles River (reaches downstream of the project area) and Tujunga Wash as identified in the most recent Basin Plan (LARWQCB, 1994). The general numeric water quality objectives for inland surface waters in the Los Angeles Region as identified in the Basin Plan are summarized in **Table 4.7-2**. In addition to the general objectives for inland surface waters presented above, the Basin Plan has established water body-specific objectives for certain areas. The objectives specific to the reach of the Los Angeles River above Figueroa Street, which includes the reach that Sun Valley Watershed drains into, are presented in **Table 4.7-3.**

Table 4.7-1
Designated Beneficial Uses for Project Area Surface Waters

Beneficial Use	Use Code	Los Angeles River* (HU 405.15 / 405.21)	Tujunga Wash (HU 405.21)
Municipal and Domestic Supply	MUN	P / P	P
Industrial Service Supply	IND	P / P	--
Groundwater Recharge	GWR	E / E	I
Water Contact Recreation	REC-1	E / E	P
Non-Contact Water Recreation	REC-2	E / E	I
Warm Freshwater Habitat	WARM	E / E	P
Cold Freshwater Habitats	COLD	-- / --	P
Wildlife Habitat	WILD	P / E	P
Wetland Habitat	WET	-- / E	--

Source: LARWQCB, 1994. P: Potential Use E: Existing Use I: Intermittent Use
HU: Hydrologic Unit * Hydrologic units (or reaches) located downstream of the project area

Table 4.7-2
General Numeric Water Quality Objectives for Inland Surface Waters

Constituent	Applicable Beneficial Use Category	Units	Objective
Inorganic Constituents			
Aluminum	MUN	mg/L	1
Antimony	MUN	mg/L	0.006
Arsenic	MUN	mg/L	0.05
Asbestos	MUN	MFL	7
Barium	MUN	mg/L	1.0
Beryllium	MUN	mg/L	0.004
Cadmium	MUN	mg/L	0.005
Chromium	MUN	mg/L	0.05
Cyanide	MUN	mg/L	0.2
Fluoride	MUN	mg/L	0.6-2.4 (depends on temperature)
Lead	MUN	mg/L	0.05
Mercury	MUN	mg/L	0.002
Nickel	MUN	mg/L	0.1
Nitrate (as NO_3)	MUN	mg/L	45
Nitrate + Nitrite (as N)	MUN	mg/L	10
Selenium	MUN	mg/L	0.05
Thallium	MUN	mg/L	0.002
Organic Constituents			
Endrin	MUN	mg/L	0.002
Lindane	MUN	mg/L	0.004
Methoxychlor	MUN	mg/L	0.1
Toxaphene	MUN	mg/L	0.005
2,4-D	MUN	mg/L	0.1
2,4,5-TP Silvex	MUN	mg/L	0.01
Biological Constituents			
Fecal Coliform	REC-1	MPN/100 ml	200 (30-day geometric mean) 400 (not more than 10% of samples during any 30-day period)
	REC-2		2,000 (30-day geometric mean) 4,000 (not more than 10% of samples during any 30-day period)
Dissolved Oxygen	COLD	mg/L	6.0
	WARM		5.0
pH	ALL	--	6.5-8.5 and no more than 0.5 above or below natural conditions
Temperature	COLD	°F	No more than 80°F and no more than 5°F above natural temperature
	WARM		No more than 5°F above natural temperature
Total Residual Chlorine	ALL	mg/L	0.1 mg/L (for surface water discharges)

MPN: Most Probable Number
MFL: Million Fibers per Liter
Source: LARWQCB, 1994.

Table 4.7-3
Numeric Water Quality Objectives for Los Angeles River above Figueroa Street

Constituent	Applicable Beneficial Use Category	Units	Objective
Total Dissolved Solids (TDS)	ALL	mg/L	950
Sulfate	ALL	mg/L	300
Chloride	ALL	mg/L	150
Nitrate + Nitrite as N	ALL	mg/L	8

Source: LARWQCB, 1994.

4.7.1.3 Water Quality of Los Angeles River and Tujunga Wash

Section 303(d) of the Clean Water Act (CWA) requires each state to develop a list of water bodies that do not meet water quality standards ("impaired water bodies"). This list of impaired water bodies, known as the "303(d) list", is developed and updated periodically by the Regional Board.

According to the current 303(d) list (2002), the water quality of the Los Angeles River is substantially impaired in most areas due to a variety of pollutants from both point and non-point sources. Stormwater runoff is considered a major source of pollutants for the Los Angeles River. In Reach 4 of the Los Angeles River, which is immediately downstream of Sun Valley Watershed, pollutants identified in the 303(d) list as causes of water quality impairment include ammonia, bacteria, lead, nutrients (algae), odors, and scum/foam (SWRCB, 2003). The reach of Tujunga Wash downstream of Hansen Dam is impaired due to ammonia, copper, bacteria, odors, scum/foam, and trash (SWRCB, 2003).

4.7.2 Existing Setting – Stormwater

4.7.2.1 Runoff Conditions in Sun Valley Watershed

Runoff is the excess portion of precipitation that does not infiltrate into the ground and "runs off" into a water body (e.g., a river, stream, or lake) or a storm drain. The quantity and quality of urban runoff are highly variable, depending on factors such as climate, season, topography, and drainage area land use. The following is a summary of watershed characteristics (land uses, climate, and drainage pattern) that affect runoff conditions in the Sun Valley Watershed.

Sun Valley Watershed is a highly urbanized watershed developed with various industrial, commercial, and residential land uses (**Figure 4.7-1**). A small portion in the northeastern end of the watershed is occupied by low-density residential uses. The remaining area in the northern watershed (north of Tuxford-San Fernando intersection) is dominated by industrial uses, including exhausted gravel pits (Cal Mat Pit and Sheldon Pit), a municipal landfill (Bradley Landfill), a power generating facility (Valley Steam Plant), Vulcan Gravel Processing Plant, and numerous auto dismantling operations. The southern portion of the watershed is primarily developed with low to medium density residential uses. Some industrial uses, including an inert landfill (Strathern Pit), are located north of Strathern Street and around Burbank Airport.

The regional climate of the project area is classified as Mediterranean, characterized by warm summers and mild winters. More than 90 percent of the area's rainfall occurs from November through April. Monthly and yearly rainfall totals are extremely variable (SCAQMD, 2002a). Annual average precipitation in the project area (San Fernando Valley) is 17.6 inches (LACDPW, 2002a).

The watershed has a moderate slope with drainage patterns flowing in a southerly direction. The watershed currently lacks a comprehensive underground storm drain system, and therefore stormwater is conveyed on street surfaces. Runoff leaves the watershed via existing storm drains (Project 5219 and Project 39) located at its southern (downstream) end (**Figure 4.7-1**). Both storm drains ultimately drain into the Los Angeles River a few miles to the south. (Drainage and flooding issues are addressed in **Section 4.6**.)

Based on existing land use types and the associated amounts of impervious surfaces (e.g., paved areas and rooftops), it is estimated that approximately 66 percent of the precipitation falling on the watershed becomes runoff. Based on this estimate, approximately 2,000 acre-feet of runoff are generated from the watershed in an average rainfall year.

4.7.2.2 Stormwater Regulatory Framework

Currently, there are no numerical standards that apply specifically to stormwater discharges. The principal regulatory framework for stormwater discharges to surface waters is the National Pollutant Discharge Elimination System (NPDES) Stormwater Program.

NPDES Stormwater Program. Stormwater runoff generated from urban areas contains various pollutants (see **Section 4.7.2.3**), and often contributes to the degradation of downstream surface water quality. Unlike wastewater discharges from industrial facilities and sewage treatment plants, stormwater discharges were mostly unregulated until the late 1980s. The primary regulatory framework for pollutant discharges to water bodies is the NPDES program, which is administered by the U.S. Environmental Protection Agency (EPA) under the CWA. In 1987, the NPDES program was expanded to regulate stormwater discharges in response to the increasing awareness for the need to control stormwater pollution. Under the NPDES Stormwater Program, municipalities, ten categories of industrial activities, and construction activities over 1 acre in area are required to obtain a NPDES permit for stormwater discharges.

In the project area, the Regional Board is the permitting authority for the NPDES stormwater program. In 2001, the Regional Board issued a NPDES municipal stormwater discharge permit for the County of Los Angeles and 84 incorporated cities (including the City of Los Angeles) within the Los Angeles County Flood Control District (LARWQCB 2001). The 2001 permit replaces the previous one issued in 1996. Under the permit, municipalities are required to develop area-wide stormwater management plans (known as Standard Urban Stormwater Mitigation Plans or SUSMPs), implement best management practices (BMPs) to reduce and/or treat stormwater runoff, and perform stormwater monitoring. NPDES stormwater permits do not impose effluent limitations.

EPA Benchmarks for Stormwater Pollutants from Industrial Facilities. As part of the NPDES Stormwater Program, EPA established "benchmark" concentrations for various pollutant parameters that are of potential concern in stormwater runoff from industrial facilities. The benchmark concentrations are shown in **Table 4.7-4** below. If concentrations of constituents exceed the benchmark levels, stormwater discharges are considered by EPA to have the potential to impair, or contribute to impairing, water quality or to affect human health if ingested. The benchmarks are intended to serve as a guide in determining whether a facility's stormwater pollution prevention measures have been successfully implemented. They are not effluent limitations (EPA, 1995).

Table 4.7-4
EPA Stormwater Parameter Benchmark Values

Parameter	Benchmark	Source	Parameter	Benchmark	Source
Biochemical Oxygen Demand (5)	30 mg/L	4	Fluoride	1.8 mg/L	6
Chemical Oxygen Demand	120 mg/L	5	Iron, Total	1.0 mg/L	12
Total Suspended Solids	100 mg/L	7	Lead, Total (H)	0.0816 mg/L	1
Oil and Grease	15 mg/L	8	Manganese	1.0 mg/L	13
Nitrate + Nitrite Nitrogen	0.68 mg/L	7	Mercury, Total	0.0024 mg/L	1
Total Phosphorus	2.0 mg/L	6	Nickel, Total (H)	1.417 mg/L	1
pH	6.0–9.0	4	PCB–1016 (c)	0.000127 mg/L	9
Acrylonitrile (c)	7.55 mg/L	2	PCB–1221 (c)	0.10 mg/L	10
Aluminum, Total (pH 6.5–9)	0.75 mg/L	1	PCB–1232 (c)	0.000318 mg/L	9
Ammonia	19 mg/L	1	PCB–1242 (c)	0.00020 mg/L	10
Antimony, Total	0.636 mg/L	9	PCB–1248 (c)	0.002544 mg/L	9
Arsenic, Total (c)	0.16854 mg/L	9	PCB–1254 (c)	0.10 mg/L	10
Benzene	0.01 mg/L	10	PCB–1260 (c)	0.000477 mg/L	9
Beryllium, Total (c)	0.13 mg/L	2	Phenols, Total	1.0 mg/L	11
Butylbenzyl phthalate	3 mg/L	3	Pyrene (PAH, c)	0.01 mg/L	10
Cadmium, Total (H)	0.0159 mg/L	9	Selenium, Total (*)	0.2385 mg/L	9
Chloride	860 mg/L	1	Silver, Total (H)	0.0318 mg/L	9
Copper, Total (H)	0.0636 mg/L	9	Toluene	10.0 mg/L	3
Dimethyl Phthalate	1.0 mg/L	11	Trichloroethylene (c)	0.0027 mg/L	3
Ethylbenzene	3.1 mg/L	3	Zinc, Total (H)	0.065 mg/L	1
Fluoranthene	0.042 mg/L	3			

Source: EPA, 1995.

Sources used by EPA to determine benchmark levels:

1. "EPA Recommended Ambient Water Quality Criteria." Acute Aquatic Life Freshwater
2. "EPA Recommended Ambient Water Quality Criteria." LOEL Acute Freshwater
3. "EPA Recommended Ambient Water Quality Criteria." Human Health Criteria for Consumption of Water and Organisms
4. Secondary Treatment Regulations (40 CFR 133)
5. Factor of 4 times BOD5 concentration—North Carolina benchmark
6. North Carolina stormwater benchmark derived from NC Water Quality Standards
7. National Urban Runoff Program (NURP) median concentration
8. Median concentration of Storm Water Effluent Limitation Guideline (40 CFR Part 419)
9. Minimum Level (ML) based upon highest Method Detection Limit (MDL) times a factor of 3.18
10. Laboratory derived Minimum Level (ML)
11. Discharge limitations and compliance data.
12. "EPA Recommended Ambient Water Quality Criteria." Chronic Aquatic Life Freshwater
13. Colorado—Chronic Aquatic Life Freshwater—Water Quality Criteria

Notes:
(*) Limit established for oil and gas exploration and production facilities only
(c) carcinogen
(H) hardness dependent
(PAH) Polynuclear Aromatic Hydrocarbon

Assumptions:
Receiving water temperature — 20 C.
Receiving water pH — 7.8.
Receiving water hardness — CaCO3 100 mg/L.
Receiving water salinity — 20 g/kg.
Acute to Chronic Ratio (ACR) — 10.

TMDLs and Stormwater Pollution. Under the CWA, states are required to develop action plans for improving the water quality of impaired water bodies on the 303(d) list (see **Section 4.7.1.3**). The process for developing the action plan begins with establishment of Total Maximum Daily Loads (TMDLs). TMDL is defined as the maximum amount of a particular pollutant that a water body can receive from various sources without violating the water quality standard. Once a TMDL is established for a specific body of water, responsibility for reducing pollution is assigned among both point sources and non-point sources that discharge to the target water body. The CWA requirement to establish and comply with TMDLs has become one of the primary driving forces for stormwater control programs that target municipal stormwater discharges (Calamita, 2003).

For the Los Angeles River, trash is the only pollutant for which a TMDL has been adopted (LARWQCB, 2003a). The Los Angeles River Trash TMDL, adopted in 2001, gives 53 municipalities (including the City of Los Angeles) located along the river 14 years to eliminate trash that reaches the river through municipal storm drains. A TMDL for nutrients has also been developed but has not yet been adopted (LARWQCB, 2003c). Development of TMDLs for other pollutants identified in the 303(d) list as causes of water quality impairment is also in progress. These future TMDLs will most likely include requirements for municipalities to reduce pollutant loads from stormwater runoff.

Title 22 – Recycled Water Use Regulations. Currently, no specific water quality or treatment level standards exist for reuse of stormwater. Title 22, Division 4, Chapter 3 of California Code of Regulations (CCR) regulates non-potable uses of recycled wastewater (i.e., water from sources that contain treated sewage). The objective of Title 22 standards is to protect public health from pathogens and other contaminants that may be present in recycled wastewater. Although it does not legally apply to stormwater reuse, Title 22 standards have been used as a treatment goal for previous stormwater reuse projects, such as the Santa Monica Urban Runoff Recycling Facility (SMURRF) (City of Santa Monica, 2003).

Title 22 establishes required treatment levels for recycled water use based on the expected degree of public contact with the recycled water. For applications with a high potential for the public to come in contact with the recycled water (e.g., irrigation of food crops, residential landscaping, and parks and playgrounds), Title 22 requires tertiary treatment and disinfection. For applications with a lower potential for public contact (e.g., irrigation of areas with restricted access, crops for livestock, and freeway landscaping), Title 22 requires secondary treatment with varying degrees of disinfection depending on the proposed use (CCR Sections 60303-60307).

Title 22 does not specify water quality or treatment level standards for use of recycled wastewater for groundwater recharge. The regulations stipulate generally that "reclaimed water used for groundwater recharge of domestic water supply aquifers by surface spreading shall be at all times of a quality that fully protects public health." The California Department of Health Services (DHS) is to make recommendations to the applicable Regional Water Quality Control Board on an individual case basis where there is a potential risk to public health (CCR Section 60320).

4.7.2.3 Stormwater Quality

Stormwater contains various pollutants that are picked up as runoff travels through urban and suburban areas. Typical pollutants in urban stormwater are bacteria, nutrients, trash, sediment, heavy metals, and organic compounds (e.g., pesticides, vehicular exhaust materials, and chemicals used in industrial processes). However, the types and amounts of pollutants contained in stormwater are highly variable, depending on factors such as climate, season, drainage area land use, and sequence and duration of storm events. Therefore, numerical characterization of stormwater quality can be a challenge. Since the 2001-2002 storm season, LACDPW has been conducting stormwater quality sampling in the Sun Valley Watershed. However, due to the limited sample size, the data gathered so far do not permit a statistically reliable characterization of stormwater quality specifically for the Sun Valley Watershed.

The following section describes the types of constituents and ranges of concentrations that can be found in urban stormwater and their potential sources based on previous studies conducted at national, regional, and local levels. Previous studies referenced in this section are as follows:

- *Literature Reviews by Pitt, et al. (1996) and EPA (1999a).* These two references review available literature on stormwater quality, including EPA's Nationwide Urban Runoff Program (NURP) (EPA, 1983). The NURP collected runoff samples between 1978 and 1982 from 81 sites located in 22 different cities throughout the United States to examine the characteristics of urban stormwater runoff. **Table 4.7-5** presents the median values of concentration for selected constituents found in stormwater sampled in the NURP study. Both Pitt, et al. (1996) and EPA (1999a) use the NURP and other subsequent studies to describe the types and concentration ranges of constituents that can be expected in urban runoff.
- *Los Angeles County NPDES Municipal Stormwater Permit Monitoring Report (LACDPW, 2001).* The NPDES Municipal Stormwater Permit (see **Section 4.7.2.2**) requires LACDPW to conduct an annual stormwater sampling and reporting program throughout Los Angeles County. The monitoring results for the years 1994 through 2000 are presented in the Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report (LACDPW, 2001). Subsequent annual reports for the 2001 and 2002 monitoring programs have also been published. However, the report for the 1994-2000 period is referenced here since it is more comprehensive and presents results for a larger number of samples than the report for the years 2001 or 2002. **Table 4.7-5** presents the median values of concentrations for selected constituents sampled throughout Los Angeles County from 1994 to 2000. Under this program, stormwater sampling consisted of both grab and composite samples. Grab samples were collected during the initial portion of the storm (on the rising limb of the hydrograph). Composite storm samples were obtained using automated samplers to collect samples over the duration of the storm.
- *Sun Valley Stormwater Runoff Monitoring (LACDPW, 2002b).* To assess the feasibility of stormwater infiltration as an alternative approach to flood control in the Sun Valley Watershed, LACDPW has been monitoring stormwater quality at four locations within the watershed since the 2001-2002 storm season. Due to the limited number of storm events that were sampled, the data do not represent a statistically complete set. **Table 4.7-5** presents ranges of concentrations for selected constituents sampled under this monitoring program. Under this program, the first flush of each rainfall event was sampled.
- *Regional Board Industrial Stormwater Sampling Data Analysis (LARWQCB, 2002).* The Regional Board compiled stormwater sampling data obtained from industrial facilities in the Los Angeles Region that are permitted under the NPDES Stormwater Program during the fiscal years 1998/1999, 1999/2000, and 2000/2001. The Regional Board compared the data with the EPA benchmarks (see **Section 4.7.2.2**). The results of the comparative analysis for industrial facilities in Sun Valley Watershed are presented in **Figure 4.7-2**. Stormwater from

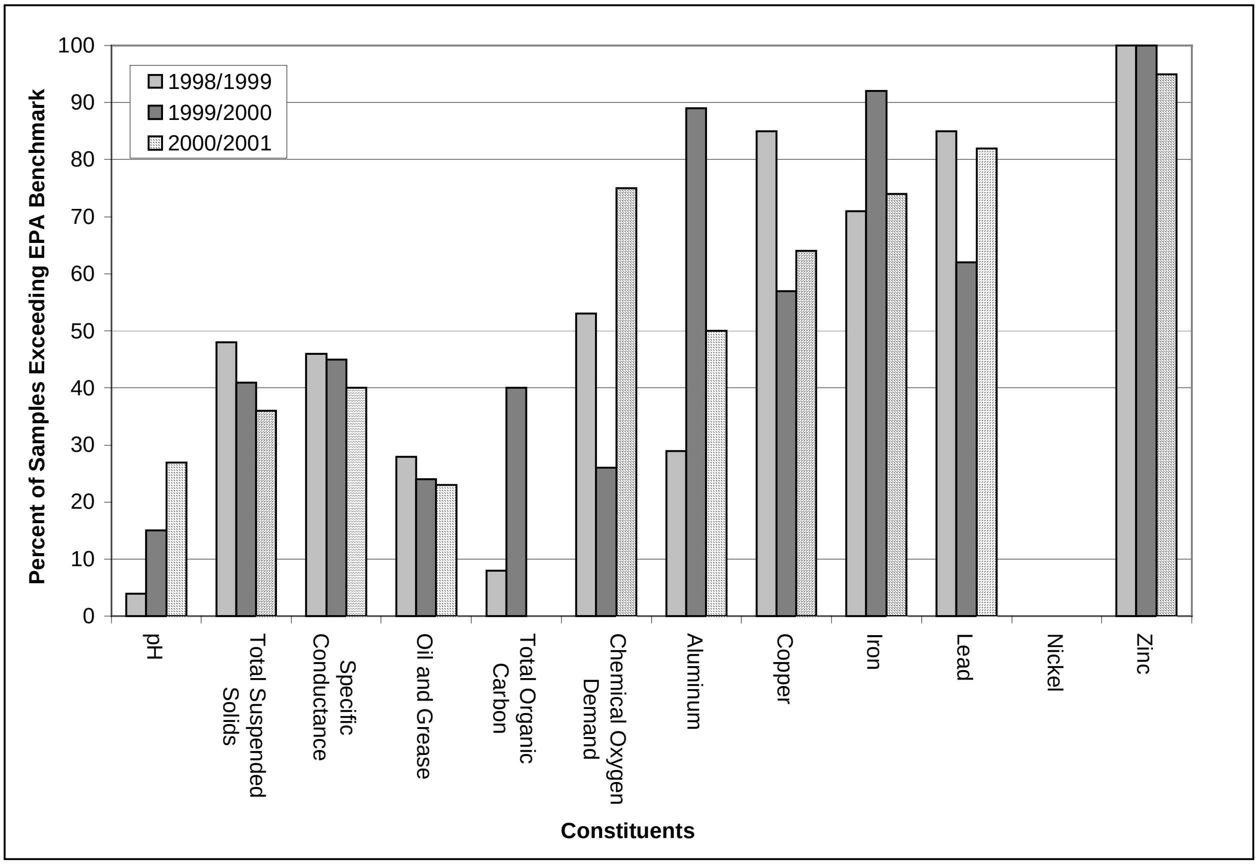
about half of the approximately 100 industrial facilities permitted in Sun Valley Watershed were sampled for at least the basic parameters.

Table 4.7-5
Median Values and Ranges of Values for Selected Pollutants found in Urban Runoff (National, Los Angeles County-wide, and Local Data)

		Basin Plan Objectives (LARWQCB, 1994)				NURP Median Concentrations (EPA, 1983)				Los Angeles County Median Concentrations (Included composite and grab samples) (LACDPW, 2001)								Sun Valley Ranges of Concentrations observed in Four Storm Events (Sampled the first flush of each rainfall event) (LACDPW, 2002b)			
Parameter	**Unit**	**Groundwater**	**Inland Surface Waters**	**EPA Benchmark** (EPA, 1995)	**State MCL** (DHS, 2003)	**Residential**	**Mixed Land Use**	**Commercial**	**Open/Non-urban**	**Commercial**	**Vacant**	**High-Density Single Family Residential**	**Transportation**	**Light Industrial**	**Educational**	**Multi-Family Residential**	**Mixed Residential**	**Glenoaks Blvd. & Sheldon St. (Residential)**	**Glenoaks Blvd. & Peoria St. (Residential)**	**San Fernando Rd. & Tuxford St. (Industrial)**	**Strathern St. & Tujunga Ave. (Industrial)**
TSS	mg/L	--	--	100	--	101	67	69	70	53	18	61	50	129	61	24	40	--	--	--	--
BOD	mg/L	--	--	30	--	10	7.8	9.3	--	24	5	15	19	17	12	9	14	--	--	--	--
COD	mg/L	--	--	120	--	73	65	57	40	89	11	39	33	51	34	26	34	--	--	--	--
Oil and Grease	mg/L	--	--	15	--	--	--	--	--	2.9	SID	1.2	2.8	1.4	SID	SID	SID	--	--	--	--
Bacteria																					
Total Coliform	MPN/100 mL	1.1	--	--	--	--	--	--	--	1,250,000	2,200	1,600,000	600,000	160,000	SID	SID	SID	14,000 - 1,400,000	300,000 – 600,000	160,000 - >=16,000,000	300,000 - 16,000,000
Fecal Coliform	MPN/100 mL	--	200 2,000	--	--	--	--	--	--	90,000	500	900,000	205,000	30,000	SID	SID	SID	11,000 – 1,400,000	300,000 – 600,000	160,000 - >=16,000,000	300,000 - 16,000,000
Salts																					
TDS	mg/L	600**	950*	--	--	--	--	--	--	106	240	38	54	77	68	42	37	34-136	72 - 116	88 - 358	144 - 166
Sulfate	mg/L	250**	300*	--	--	--	--	--	--	11	15	3.8	6.4	9.2	9.3	4.1	5.0	5 - 17	9 - 10	15 - 95	29 - 37
Chloride	mg/L	100**	150*	860	--	--	--	--	--	16	6.5	4.2	4.4	8.6	4.6	3.0	2.7	2 - 6	4 - 8	5 - 28	8 - 11
Nutrients																					
NO_3-N + NO_2-N	mg/L	10	8*	0.68	10	0.7	0.6	0.6	0.5	0.50	0.99	0.51	0.46	0.58	0.53	0.85	0.50	--	--	--	--
Nitrate as NO_3	mg/L	45	45	--	45	--	--	--	--	1.8	4.0	2.2	1.8	2.2	2.2	3.5	1.8	<0.1 - 1.98	<0.1 - 5.9	<0.1	<0.1
Nitrite as N	mg/L	1	--	--	1	--	--	--	--	0.07	0.05	0.05	0.06	0.06	0.05	0.05	0.06	--	--	--	--
Total Phosphorus	mg/L	--	--	2.0	--	0.38	0.26	0.20	0.12	0.28	0.05	0.32	0.32	0.30	0.23	0.14	0.18	--	--	--	--
Metals																					
Aluminum	mg/L	--	1	0.75	1	--	--	--	--	0.295	0.234	0.287	0.354	0.470	0.720	0.300	0.271	0.24 – 2.68	0.63 – 2.68	1.43 – 11.5	1.29 – 1.88
Boron	mg/L	1.5**	--	--	--	--	--	--	--	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	<0.1 - 0.16	<0.005	<0.005 - 0.111	0.10 - 0.13
Copper	µg/L	--	--	63.6	1300***	33	27	29	--	22	5.5	11	39	21	15	12	13	19 - 148	11 - 62	29 - 183	29 - 51
Chromium	µg/L	--	50	--	50	--	--	--	--	2.5	SID	SID	2.5	2.5	2.5	SID	SID	<5 – 13.2	<5 – 5.96	<5 – 22	6.5 - 12.6
Lead	µg/L	--	50	81.6	15 ***	144	114	104	30	2.5	SID	5.4	2.5	5.1	2.5	2.5	2.5	7 - 64	10 - 34	27 - 495	28 - 34
Nickel	µg/L	--	100	1.417	100	--	--	--	--	2.5	SID	SID	2.5	6.0	2.5	SID	SID	<5 – 45.2	<5 – 11.1	8.8 - 119	22.2 – 25.2
Zinc	µg/L	--	--	65	--	135	154	226	195	192	25	66	218	366	98	89	125	150 - 793	76 - 252	190 - 835	170 - 298

-- No data reported
SID Statistically Insignificant Data
* Objectives for Los Angeles River above Figueroa Street (more stringent than the general Basin Plan objectives) are shown.
** San Fernando Groundwater Basin in project area
*** Regulatory Action Level; if system exceeds, it must take certain actions.
The coefficients of variance associated with the median values for the data from EPA, 1983 and LACDPW, 2001 are not shown for ease of reading.

Figure 4.7-2
Percent of Industrial Facilities in Sun Valley Watershed with Stormwater Pollutant Concentrations above EPA Benchmarks



Source: LARWQCB, 2002c.

Suspended Solids. Suspended solids in stormwater consist of silt, clay, and other sediments carried by runoff from various types of surfaces. Roadways, disturbed sites (e.g., construction sites), and other areas with exposed soils can contribute to high suspended solids in urban runoff. Suspended solids eventually settle out onto stream beds or coastal areas, where they can have adverse effects on aquatic and marine ecosystems (e.g., by reducing light and oxygen availability). In addition, suspended solids in stormwater can serve as carriers of pathogens and toxic constituents, particularly heavy metals (see below under the heading **Metals**).

In the NURP study, the median concentrations of total suspended solids (TSS) in stormwater ranged between 67 and 101 mg/L (EPA, 1983). The Los Angeles County-wide data showed similar median concentrations (around 50 mg/L). In runoff from light industrial land uses, TSS concentrations above 400 mg/L were observed in some samples; the median was 129 mg/L (LACDPW, 2001). In the Sun Valley Watershed, TSS in excess of the EPA benchmark (100 mg/L) was observed in runoff from approximately 40 percent of the industrial facilities sampled (LARWQCB, 2002).

Pathogens. Disease-causing microorganisms such as bacteria and viruses, originating from pet waste or leaking septic tanks and sewer lines, are frequently found in urban stormwater. Total coliform and fecal coliform bacteria are used in water quality analysis as indicators for pathogenic microorganisms. When comparing urban runoff from different land uses in Long Island, New York, low-density residential and nonresidential areas contributed the fewest bacteria to the runoff, while medium-density residential and commercial areas contributed the most (Pitt, et al., 1996). Both the Long Island study and the NURP monitoring results found that fecal coliforms and fecal streptococci were significantly higher during the warmer seasons (Pitt, et al., 1996). In Los Angeles County, total coliform and fecal bacteria (total of fecal coliform, fecal streptococcus, and fecal enterococcus) were detected in all stormwater samples tested since 1994 at densities (or most probable number, MPN) between several hundreds to several million cells per 100 mL (LACDPW, 2001).

Metals. Heavy metals such as aluminum, cadmium, copper, lead, nickel, and zinc, are found routinely in urban runoff from all land use types (Pitt, et al., 1996). Chromium can also be found in stormwater from industrial areas (Pitt, et al., 1996). Primary sources of heavy metals in urban runoff are roadways (automobiles), corroding metal surfaces (e.g., rooftops), and industrial facilities. Most of these metals have very low solubilities at the pH found in most natural waters, and are therefore mostly sorbed onto sediments in stormwater (Pitt, et al., 1996). Heavy metals can have adverse effects on both human health and aquatic organisms even at low concentrations.

The NURP median concentration of total copper was approximately 30 µg/ L for all land use types. Median zinc concentrations ranged from 135 to 226 µg/L (commercial). In Los Angeles County, light industrial land uses displayed the highest median values for total zinc (366 µg/L). Transportation land uses displayed the highest median values for total copper (39 µg/L). The EPA Benchmark concentrations for total zinc and total copper are 65 µg/L and 63.6 µg/L, respectively (EPA, 1995). In the Sun Valley Watershed, metal concentrations in excess of EPA benchmarks were observed in runoff from many of the industrial facilities sampled. EPA benchmarks were exceeded at over 50 percent of the facilities for aluminum, copper, iron, lead, and zinc (LARWQCB, 2002).

Nutrients. Sources of nutrients (i.e., nitrogen and phosphorus compounds) in urban runoff are vehicular exhaust (NO_x) deposited onto road surfaces and adjacent areas, animal droppings and remains, and fertilizers applied to golf courses, parks, or home lawns (Pitt, et al., 1996). Excessive nutrient concentrations in lakes and ponds can cause algae blooms, leading to oxygen depletion and adverse effects on the aquatic ecosystem. High nitrate (NO_3) concentrations (above 10 mg/L as N) in drinking water can have acute health effects on human infants, and may also increase the risk of stomach cancer in adults (Pitt, et al., 1996).

In the NURP study, median concentrations of nitrogen (NO_3-N + NO_2-N) ranged around 0.6 mg/L (Pitt, et al., 1996). Median nitrate concentrations (as NO_3) observed from the Los Angeles County data ranged between 1.8 mg/L and 4.2 mg/L. Vacant sites and multi-family residential areas had the highest median concentrations at 4.2 mg/L and 3.6 mg/L, respectively (LACDPW, 2001). In runoff sampled from Sun Valley Watershed, nitrate concentrations were not detected at most locations, but up to 5.9 mg/L was observed at two locations with residential drainage areas (LACDPW, 2002b). The EPA benchmark for NO_3-N + NO_2-N is 0.68 mg/L.

Petroleum Hydrocarbons and Other Organic Compounds. Organic compounds including pesticides, petroleum hydrocarbons, and other synthetic compounds can be found in urban stormwater. The primary sources of these compounds are gasoline and oil drippings, tire residuals, vehicular exhaust material, industrial facilities, and pesticide applications at golf courses, parks, and home lawns (Pitt, et al., 1996). Similar to heavy metals, many of these organic compounds in stormwater are sorbed onto suspended solids (Pitt, et al., 1996). Many of these organic compounds are toxic to human and ecosystem health.

In many previous studies, concentrations of many of these toxic pollutants exceeded the EPA water quality standards for human health protection by large margins (Pitt, et al., 1996). In the NURP study, the following organic compounds were detected in over 10 percent of the stormwater samples (EPA, 1999a):

- Industrial chemicals: Bis(2-ethylhexyl)phthalate (used in production of polyvinyl chloride), pentachlorophenol (a wood preservative), phenol, dichloromethane (used in paint remover), and 4-nitrophenol (used in dyes and fungicides)
- Pesticides: alpha-Hexachloro-cyclohexane, alpha-endosulfan, lindane, and chlordane
- Polycyclic Aromatic Hydrocarbons (PAHs): chrysene, fluoranthene, pyrene, and phenanthrene

Many petroleum hydrocarbons are present in stormwater as oil and grease. In Los Angeles County, median concentrations of oil and grease ranged between 1.2 mg/L and 2.9 mg/L. In the Sun Valley Watershed, oil and grease in excess of EPA benchmark (15 mg/L) were observed in runoff from about 20 to 30 percent of the industrial facilities sampled (LARWQCB, 2002).

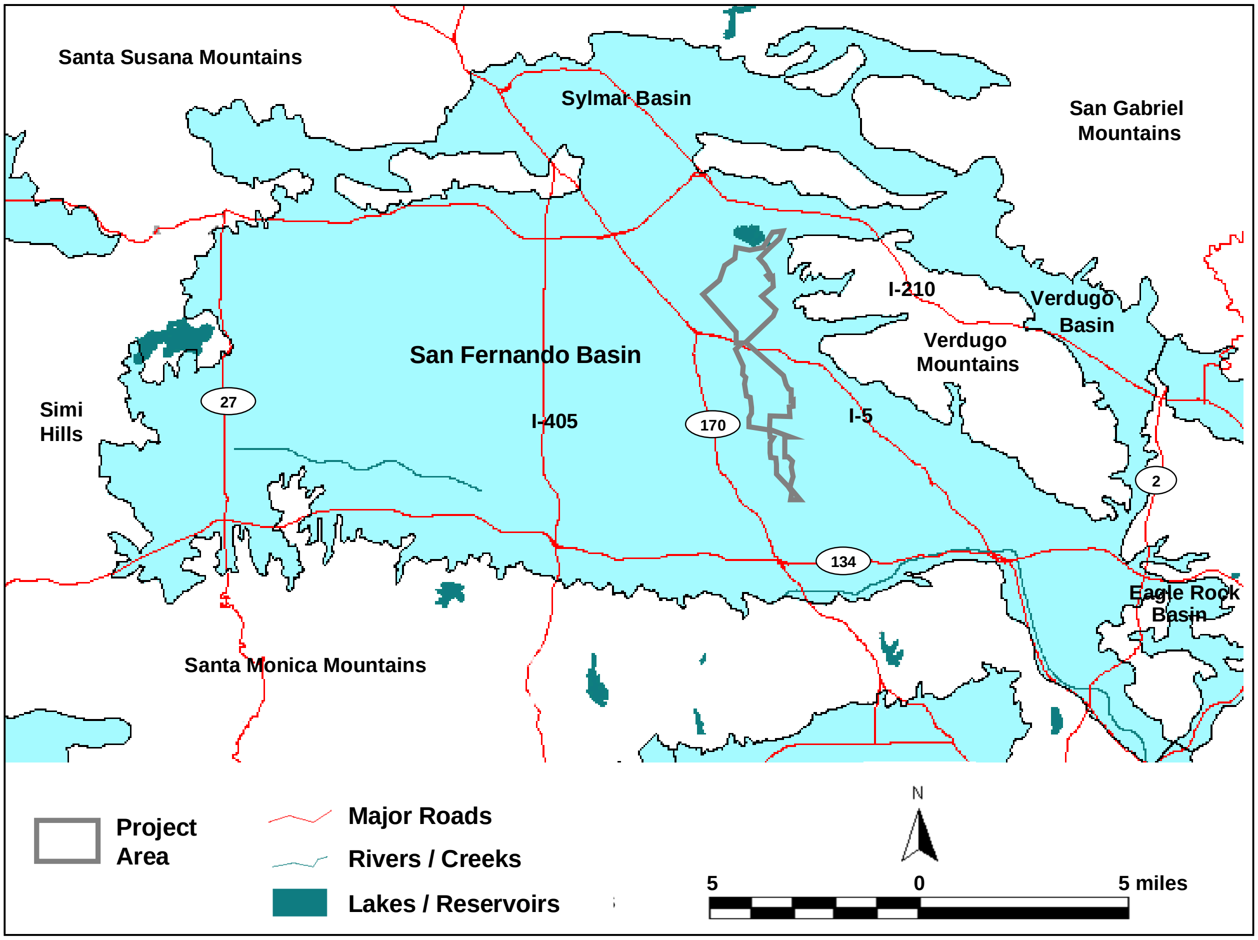
4.7.3 Existing Setting – Groundwater

The proposed project area overlies the eastern portion of the San Fernando Groundwater Basin (SFB) (**Figure 4.7-3**). The SFB covers an area of 112,000 acres, and is estimated to have a total groundwater storage capacity of approximately 3,200,000 acre-feet. It is an unconfined aquifer (i.e., the groundwater is not separated from the ground surface by an impermeable geological boundary) composed of alluvial deposits. The SFB is bounded on the east by the Verdugo Mountains, on the north by the San Gabriel Mountains, on the northwest and west by the Santa Susana Mountains and Simi Hills, and on the south by the Santa Monica Mountains. The general direction of groundwater flow is from the north and west to the southeast (ULARA Watermaster, 2002).

The SFB is an important source of drinking water for the region. The SFB is an adjudicated groundwater basin (i.e., the rights to extract groundwater from the SFB have been allocated to various users by a court order). The cities of Los Angeles, Glendale, and Burbank have adjudicated rights to pump groundwater in the SFB. In addition, several public and private parties are granted limited entitlement to extract groundwater. The City of Los Angeles is by far the largest user of groundwater in the SFB, which supplies approximately 15 percent of the water consumed in the city (LADWP, 2000).

The Upper Los Angeles River Area (ULARA) Watermaster is responsible for administering the water rights allocations for the ULARA, which includes the SFB as well as the Sylmar, Verdugo, and Eagle Rock groundwater basins. All inflows to and outflows from these basins are accounted for and reported in the annual reports prepared by the ULARA Watermaster.

Figure 4.7-3
San Fernando Groundwater Basin Map

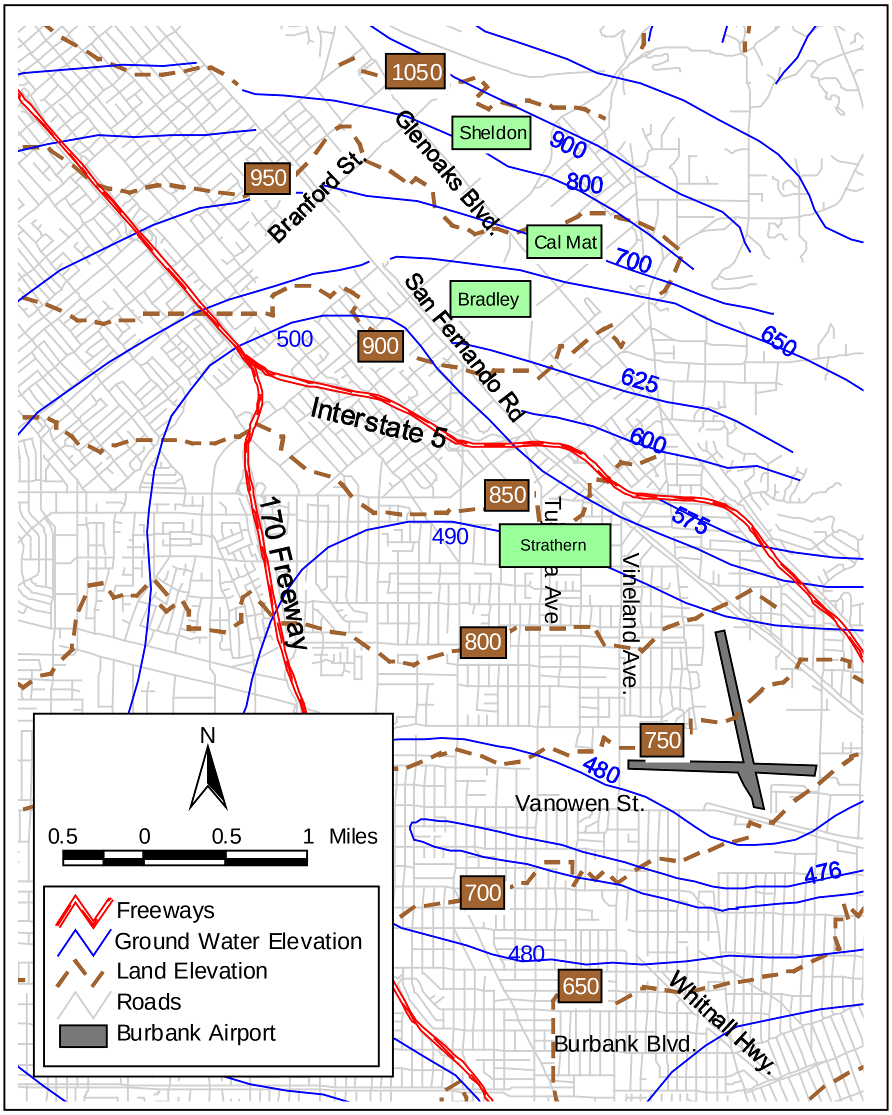


Source: Modified from DWR, 2003

4.7.3.1 Groundwater Levels

Groundwater and land elevations in Sun Valley as of Spring 1991 are shown in **Figure 4.7-4**. In general, groundwater levels in the project area range from over 250 feet below ground surface (bgs) to 100 feet bgs. Distance from the ground surface to the water table increases from north to south. At the bottom of the gravel pits (i.e., Sheldon Pit, Cal Mat Pit, and Strathern Pit), groundwater levels may be closer to the surface due to past gravel mining operations. For example, the southern portion of Sheldon Pit has been excavated to a level where groundwater is exposed to the surface, and is currently used as a source and disposal location for gravel washwater.

Figure 4.7-4
Groundwater Levels in Project Area (1991)



Source: EPA, 2002c.

4.7.3.2 Spreading Operations in San Fernando Basin

In the SFB, several spreading grounds are used to provide artificial recharge of groundwater. Most of the water used for recharge operations is stormwater captured by the flood control basins in the area. Imported water is spread on rare occasions when there is a surplus. **Table 4.7-6** lists the six spreading grounds in the SFB. The locations of the two spreading grounds near the project area (Tujunga and Hansen) are shown in **Figure 4.7-1**. The five facilities operated by LACDPW (Branford, Hansen, Lopez, Tujunga, and Pacoima) are currently active. The Headworks spreading grounds operated by LADWP has been inactive since 1984.

The long-term average amount of water spread within the SFB is approximately 30,000 acre-feet per year (LADWP, 2000). However, the amount of water spread each year is highly variable due to varying runoff conditions. During the period between 1996 and 2002, the maximum was 62,000 acre-feet (1998-1999 storm season) and the minimum was 2,664 acre-feet (2001-2002) (M. Mackowski, pers. comm., 2003).

In recent years, the use of the Tujunga Spreading Grounds has been limited due to methane gas migration from the adjacent historical landfill (Sheldon/Arleta Landfill) (ULARA Watermaster, 2002). When large amounts of water are infiltrated at the Tujunga Spreading Grounds, this results in the release of methane on the eastern side of the landfill. Currently, the spreading grounds are operated at up to 50 cubic feet per second (cfs), which is approximately 20 percent of their maximum capacity. LADWP has been conducting a pilot study to continue limited spreading while operating a gas collection system. Recent results of the pilot study showed that no gas migration occurred when the spreading grounds are operated at up to 100 cfs. It is anticipated that the operation will be increased gradually over the next several years until the full capacity of the spreading grounds is reached, as long as the methane migration can be contained (M. Mackowski, pers. comm., 2003).

Table 4.7-6
Spreading Grounds in San Fernando Basin

Facility	Location	Source of Water*	Annual Spreading (acre-feet)		
			2000-2001*	Average**	Maximum Capacity**
Branford	Mission Hills	Branford Street drain	562	520	1,000
Hansen	Sun Valley	Hansen and Big Tujunga Dams	11,694	14,320	36,000
Lopez	Lake View Terrace	Pacoima Dam and Lopez Flood Control Basin	172	570	5,000
Pacoima	Pacoima	Pacoima Dam, Lopez Flood Control Basin, East Canyon and Pacoima Wash, and imported water	3,826	6,800	29,000
Tujunga	Sun Valley	--	1,685	2,900	58,000
Headworks	Griffith Park	--	#	5,300	22,000
Total			**17,939**	**30,410**	**151,000**

Sources:
* LACDPW, 2002.
** LADWP, 2000.

Not in use since 1984.

4.7.3.3 Basin Plan Beneficial Uses and Water Quality Objectives for Groundwater

The designated beneficial uses of groundwater in the SFB are municipal and domestic supply, industrial service supply, agricultural supply, and industrial process supply (LARWQCB, 1994). The numerical objectives for groundwater in the Los Angeles Region as identified in the Basin Plan are summarized in **Table 4.7-7.** Basin Plan groundwater quality objectives specific to the SFB are shown in **Table 4.7-8**.

Table 4.7-7
Basin Plan Regional Objectives for Groundwater Quality

Constituent	Applicable Beneficial Use Category	Units	Objective
Coliform Organisms	MUN	MPN/100 mL	1.1 (over any seven-day period)
Nitrate + Nitrite (as N)	MUN	mg/L	10
Nitrate (as NO_3)	MUN	mg/L	45
Chemical constituents and radioactivity	MUN	--	Same as Inland Surface Waters (see **Table 4.7-2**)

Source: LARWQCB, 1994.

Table 4.7-8
Water Quality Objectives for Selected Constituents in San Fernando Basin

Basin	Objective (mg/L)			
	TDS	Sulfate	Chloride	Boron
San Fernando Basin west of Highway 405	800	300	100	1.5
San Fernando Basin east of Highway 405 (overall)	700	300	100	1.5
Sunland-Tujunga area	400	50	50	0.5
Foothill area	400	100	50	1.0
Area encompassing RT-Tujunga-Erwin-N. Hollywood-Whithall-LA/Verdugo-Crystal Springs-Headworks-Glendale/Burbank Well Fields*	600	250	100	1.5
Narrows area (below confluence of Verdugo Wash with the Los Angeles River)	900	300	150	1.5

Source: LARWQCB, 1994.
* This area of the SFB includes the project area.

4.7.3.4 Groundwater Quality

In the eastern part of the SFB, calcium bicarbonate character dominates, and in the western part, calcium sulfate-bicarbonate character is dominant. TDS ranges from 326 to 615 mg/L (DWR, 2003). Data from 125 public supply wells show an average TDS content of 499 mg/L, with a range of 176 to 1,160 mg/L (DWR, 2003). Because the SFB is an unconfined aquifer, it has been susceptible to contamination from urban land uses, particularly existing and historical industrial operations. **Table 4.7-9** shows the number of public water supply wells with concentrations of pollutants above their respective maximum contaminant levels (MCLs). Existing groundwater contamination in the SFB includes Volatile Organic Compounds (VOCs) and nitrates in the eastern portion (ULARA Watermaster, 2002) of the SFB. In addition, elevated levels of sulfate and TDS are found in wells in the western end of the SFB (ULARA Watermaster, 2002). In addition, elevated levels of hexavalent-chromium were found in wells from the eastern portion of SFB in the late 1990s (LARWQCB, 2000). The existing groundwater quality issues in the eastern SFB are described below.

Table 4.7-9
Water Quality in Public Supply Wells of San Fernando Basin

Constituent Group	Number of Wells Sampled[1]	Wells with a Concentration Above a MCL[2]	
		Number	Percent
Inorganics with primary MCLs	129	6	5 %
Radiological	122	13	11 %
Nitrates	129	44	34 %
Pesticides	134	3	2 %
VOCs and SOCs	134	90	67 %
Inorganics with secondary MCLs	129	17	13 %

Source: DWR, 2003.
VOCs: Volatile Organic Carbons
SOCs: Semivolatile Organic Carbons
MCL: Maximum Contaminant Level (the highest level of a contaminant that EPA or DHS allows in drinking water.) Secondary MCLs address the taste, odor, or appearance of drinking water.

1 Represents distinct number of wells sampled as required under DHS Title 22 program from 1994 through 2000.
2 Each well reported with a concentration above a MCL was confirmed with a second detection above a MCL. This information is intended as an indicator of the types of activities that cause contamination in a given basin. It represents the water quality at the sample location, and does not indicate the water quality delivered to the consumer.

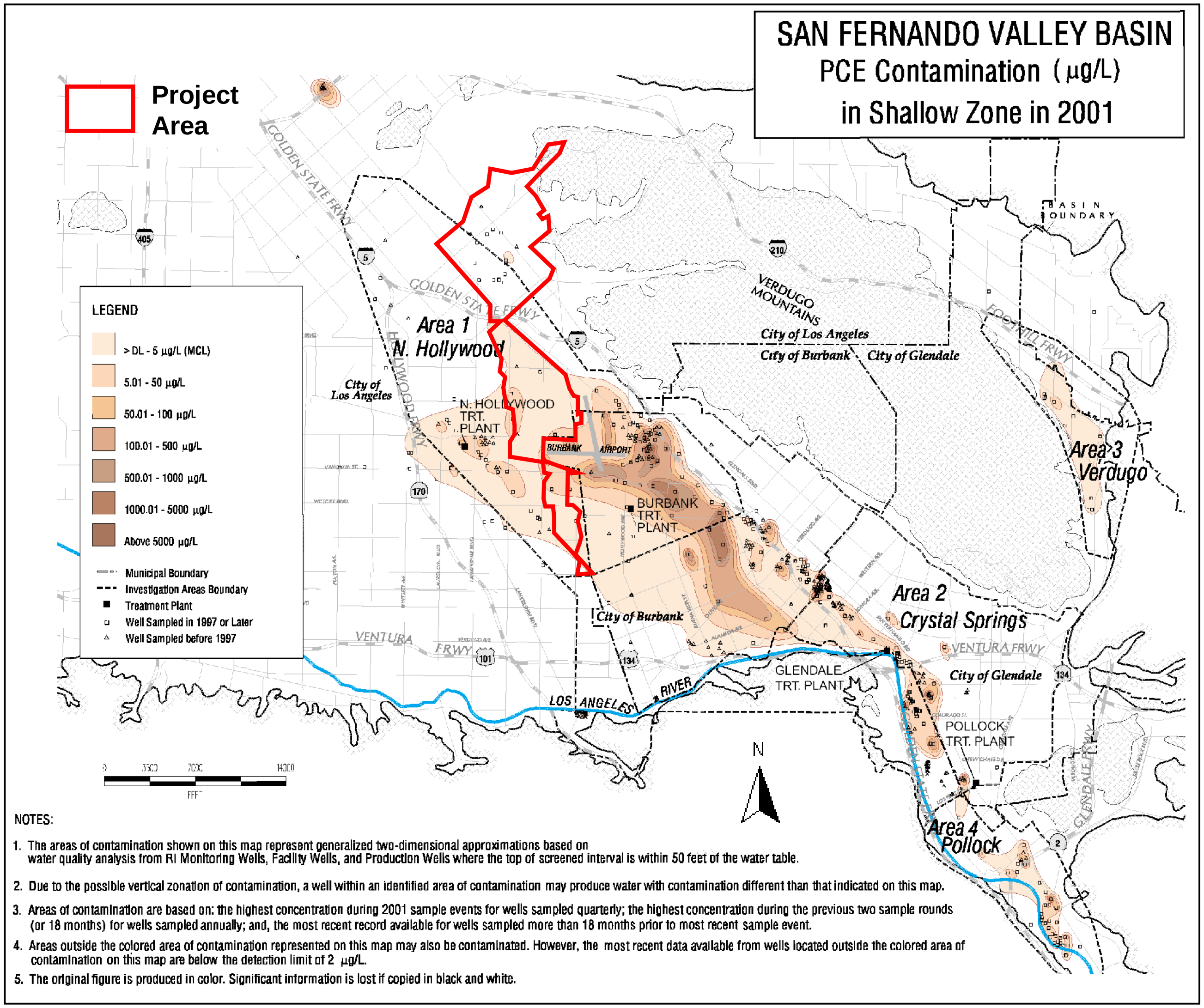
VOCs (TCE and PCE). The southern portion of the project area overlaps with existing VOC groundwater contaminant plumes in the eastern SFB. First discovered in the early 1980s, concentrations of chlorinated VOCs, namely trichloroethylene (TCE) and perchloroethylene (PCE), were found to be above federal and state drinking water quality standards (MCLs) in many city production wells located in the eastern part of the SFB. TCE and PCE are associated with adverse health effects such as liver problems and increased risk of cancer. Both compounds were widely used as solvents in a number of industries including aerospace and defense manufacturing, machinery degreasing, dry-cleaning, and metal plating (EPA, 2000).

In 1986, the San Fernando Valley was listed on the National Priorities List (NPL) under the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund. NPL is a list of sites with known releases or threatened releases of contaminants that have been determined to warrant further investigation by EPA. Since the late 1980s, EPA, in cooperation with state and local agencies, has been conducting clean-up by pumping groundwater from a series of wells and treating the water to remove the VOCs. The project area is located within the North Hollywood and Burbank Operable Units (OUs). An OU is a focused study area established to facilitate the clean-up efforts. Under EPA oversight, public supply wells located within the North Hollywood and Burbank OUs are operated by LADWP and the City of Burbank Water and Power, respectively. Water from these wells is treated and/or blended with higher quality water before entering public water supply distribution systems (EPA, 2000).

Since 1992, EPA has conducted a Basinwide Monitoring Program, which consists of quarterly sampling of groundwater wells located throughout the eastern portion of the SFB (EPA, 2002a). During the monitoring program for 2001, TCE and PCE were detected in over 85 percent of the

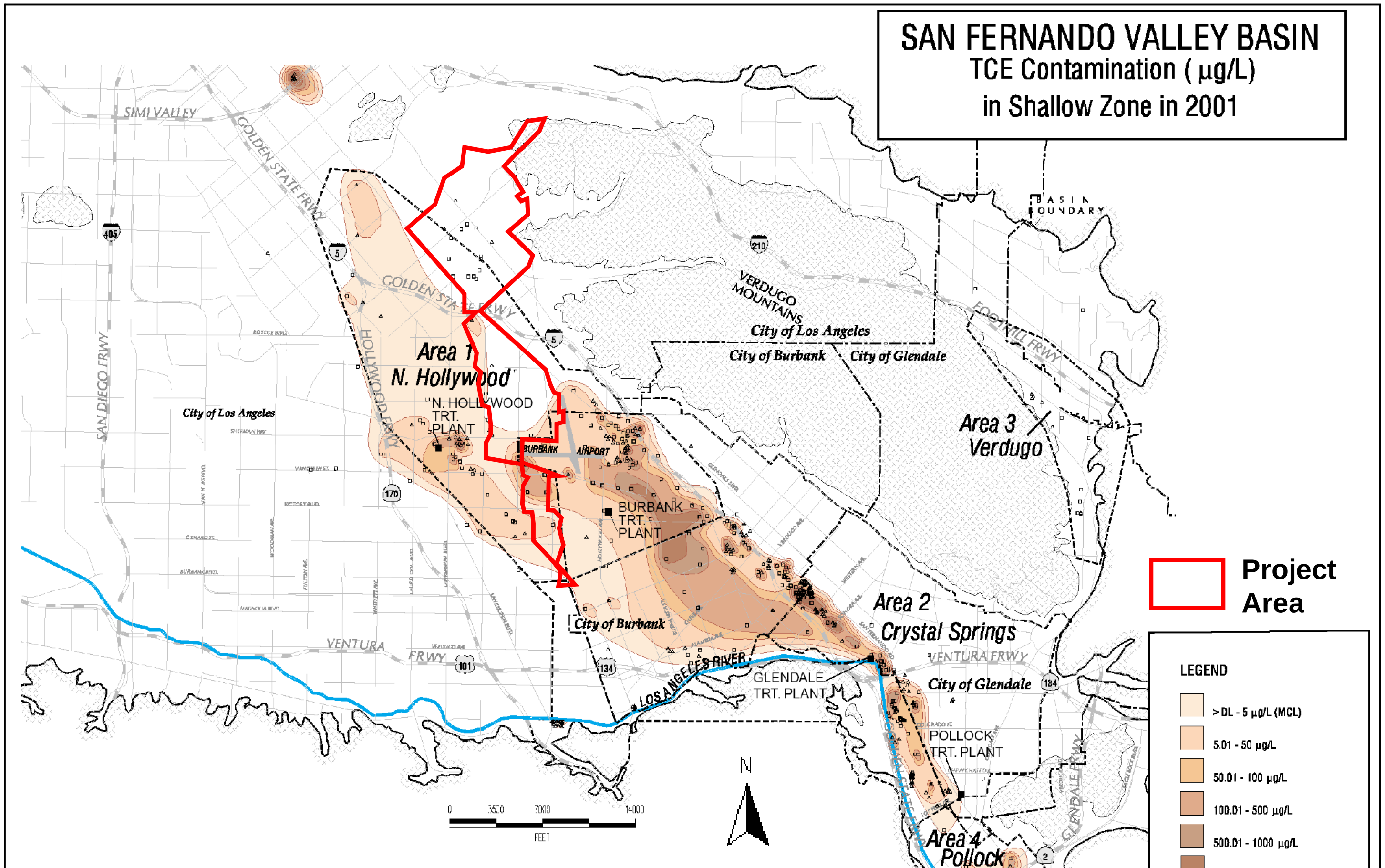
63 wells sampled, with 23 (TCE) and 17 (PCE) of the wells exceeding the state MCL (EPA, 2003d). Since 1999, EPA has also included the following constituents in the sampling program to determine if they are of concern in the SFB and whether clean-up action is required: hexavalent chromium, methyl tertiary butyl ether (MTBE), SOCs, and perchlorate (EPA, 2003d). **Figure 4.7-5 and Figure 4.7-6** show the extent of the contaminant plumes for TCE and PCE in 2001.

Figure 4.7-5
PCE Contamination Plume in the San Fernando Basin 2001



Source: Modified from EPA, 2003d.

Figure 4.7-6
TCE Contamination Plume in the San Fernando Basin 2001



NOTES:

1. The areas of contamination shown on this map represent generalized two-dimensional approximations based on water quality analysis from RI Monitoring Wells, Facility Wells, and Production Wells where the top of screened interval is within 50 feet of the water table.
2. Due to the possible vertical zonation of contamination, a well within an identified area of contamination may produce water with contamination different than that indicated on this map.
3. Areas of contamination are based on: the highest concentration during 2001 sample events for wells sampled quarterly; the highest concentration during the previous two sample rounds (or 18 months) for wells sampled annually; and, the most recent record available for wells sampled more than 18 months prior to most recent sample event.
4. Areas outside the colored area of contamination represented on this map may also be contaminated. However, the most recent data available from wells located outside the colored area of contamination on this map are below the detection limit of 2 µg/L.
5. The original figure is produced in color. Significant information is lost if copied in black and white.

Source: Modified from EPA, 2003d.

Hexavalent Chromium. Hexavalent chromium (chromium-6) is one of the two chemical forms of chromium. It forms soluble, non-reactive compounds in groundwater and is toxic to organisms and plants. Hexavalent chromium is a known carcinogen when inhaled, but the health risk from ingesting it in drinking water is unclear (ULARA Watermaster, 2002). Potential sources of hexavalent chromium in the environment are industrial waste from metal plating operations, making of steel and other alloys, bricks in furnaces, dyes and pigments, chrome plating, leather tanning, and in wood preserving. Trivalent chromium is another chemical form of chromium which forms insoluble mineral precipitates and is, in small concentrations, necessary for life as an essential nutrient (LARWQCB, 2000).

Currently, no federal or state drinking water standard, i.e., Maximum Contaminant Level (MCL), has been established specifically for hexavalent chromium. The federal and state MCLs for total chromium (the sum of hexavalent and trivalent chromium) in drinking water are 100 micrograms per liter (µg/L) and 50 µg/L, respectively (LARWQCB, 2000). In California, DHS has been required by law to adopt a State MCL for chromium-6 by January 1, 2004 (DHS, 2002).

In the late 1990s, elevated levels of hexavalent chromium were detected in SFB wells, especially along the eastern portion (LARWQCB, 2000). Since 1999, EPA and the Regional Board identified over 200 chromium users in the region and conducted on-site inspections. As a result, the Regional Board issued four Cleanup and Abatement Orders, and several additional orders will be issued in the near future (EPA, 2003d). During the 2001 Basinwide Monitoring Program conducted by EPA, hexavalent chromium was detected in 46 of the 63 wells sampled. Concentrations from four wells exceeded the State MCL of 50 µg/L for Total Chromium; the highest concentration recorded was 523 µg/L (EPA, 2003d).

Nitrate. Nitrate, an inorganic contaminant, has also been detected in the SFB, consistently at levels in excess of the federal drinking water quality standard (10 mg/L as N). Nitrate contamination may be the result of past agricultural practices and/or septic system or ammonia releases (EPA, 2002a). Over one-third of the public water supply wells in the SFB exceed the MCL for nitrate (DWR, 2003) (**Table 4.7-9**).

4.7.4 Proposed Stormwater Management Approach

The proposed project involves construction of stormwater management facilities throughout Sun Valley Watershed. A combination of facilities and devices is proposed to collect, store, treat, and infiltrate or reuse stormwater runoff. The proposed stormwater treatment methods are described below in **Section 4.7.4.1**. Under the proposed project, the uses of collected stormwater are: 1) infiltration for groundwater recharge, 2) reuse for gravel washing at the Vulcan Gravel Processing Plant, and 3) reuse for irrigation of landscaped areas at various locations. The proposed uses of stormwater are described below in **Sections 4.7.4.2** and **4.7.4.3**. The total amount of water conserved (i.e., sum of infiltration and reuse) in a year with average rainfall is 2,124 acre-feet for Alternatives 1, 3, and 4, and 8,123 acre-feet for Alternative 2.

In contrast to the traditional approach to flood control, which relies only on storm drains, the proposed strategy of infiltrating and/or reusing stormwater achieves multiple benefits in addition to local flood control:

- Reduction of flooding in downstream areas
- Reduction of pollutant load to downstream surface waters
- Groundwater recharge (in case of infiltration)
- Reduction in the demand for potable water supply (in case of reuse for non-potable purposes)

4.7.4.1 Treatment

Improving water quality is one of the objectives of the proposed project. The general aim of the Watershed Management Plan will be to provide sufficient stormwater treatment to ensure that the quality of water infiltrated under the project is equal to or higher than existing groundwater. To safeguard the quality of surface water and groundwater as well as public health, each project component includes a combination of treatment devices or processes designed to remove various pollutants from the collected stormwater. During the concept design phase, a combination of treatments has been proposed for each project component based on the expected quality of influent stormwater (i.e., drainage area land use) and ultimate use of the collected stormwater (i.e., groundwater recharge, reuse for gravel washing, or reuse for irrigation). The number and types of treatment processes included for each project component may be modified during the detailed design phase as necessary.

At a minimum, all of the project components will be designed to remove trash and other visible pollutants from all stormwater flows entering the proposed facilities. The other proposed pollutant removal devices (see below) will be designed to treat 90 percent of the runoff, which is the first 1.7 inches of each rainfall event. The 1.7 inches were determined based on historical runoff records in Sun Valley from 1929 to 1995. This is a more stringent standard than the criteria established under the LACDPW Standard Urban Stormwater Mitigation Plan (85 percent or first 0.75 inches of a rainfall event).

Each project component will use a combination of one or more of the following stormwater treatment methods or devices:

- Trash screens
- Stormwater separation devices
- Proprietary stormwater treatment filters
- Sedimentation basins
- Constructed treatment wetlands
- Grassed swales and other vegetated buffers
- Infiltration through soils
- Disinfection

Trash Screens. Trash screens will be used to remove large debris from stormwater entering catch basins, storm drains, or other stormwater retention/conveyance facilities. Trash screens also protect and prevent clogging of other stormwater treatment facilities.

Stormwater Separation Devices. Stormwater separation devices are designed to separate settlable and floatable materials from the water by gravity, thereby removing pollutants such as grit, sediment, oil, and grease. These units are commercially available from several manufacturers. Maintenance includes periodic removal of trapped sediments and floatables. These devices would be installed inline with storm drains downstream of catch basins and upstream of all the project components. Since many toxic substances (e.g., heavy metals and organic compounds) found in stormwater are attached to sediments or are contained as oil and grease, stormwater separation devices can also remove some of these toxic substances. Pollutant removal rates of stormwater separation devices reported by the manufacturers are presented in **Table 4.7-10**.

Table 4.7-10
Reported Pollutant Removal Rates of Stormwater Separation Devices

Pollutant	Reported Removal Rates				
	Lab Tests[1, 2]	Westwood, Massachussetts[1]	Alberta, Canada[1]	Australia[2]	Brevard Co., Florida[2]
Suspended Solids	73 - 84 %	93 %	53 %	70 %	52 %
Oil and Grease	80 - 98 %	--	43 %	--	--
Phosphorus	--	--	--	30 %	30 %
Petroleum Hydrocarbons	--	82 %	--	--	--
Copper	--	--	22 %	--	--
Lead	--	--	51 %	--	--
Zinc	--	--	39 %	--	--
Iron	--	--	53 %	--	--
Chromium	--	--	41 %	--	--

Sources: 1 Stormceptor, 2003.
2 CDS Technologies, 2003.

Sedimentation Basins. Sedimentation basins are designed to temporarily impound stormwater before being discharged to another stormwater treatment device. Sedimentation basins are designed to be dry between storm events. They provide pretreatment of runoff by removing suspended solids and associated contaminants by settling, so that sediments do not clog or otherwise impact the performance of subsequent treatment devices. Sedimentation basins are proposed for the following project components: Cal Mat Pit, Power Line Easement, Valley Steam Plant, Sheldon Pit, Strathern Pit, and Vulcan Gravel Processing Plant.

Constructed Wetlands. Wetlands are areas that are typically inundated with surface or ground water and support plants adapted to saturated soil conditions. Physical, chemical, and biological, processes (sedimentation, filtration, volatilization, adsorption, absorption, microbial decomposition and plant uptake) that occur in natural wetlands can break down or filter some pollutants. Constructed or man-made wetlands take advantage of these processes and are used to treat wastewater or urban runoff. Use of constructed wetlands for stormwater treatment is proposed in the following project components: Sheldon Pit and Strathern Pit. Wetlands for the proposed project would be designed as free water surface (FWS) wetlands according to EPA's guidelines for stormwater treatment wetlands (EPA, 1999). Most of the wetland area will be in shallow ponds. Water would be circulated continuously using a small pump to provide a constant flow of water to maintain the wetland vegetation. Typical pollutant removal rates of constructed wetlands are shown in **Table 4.7-11.**

Proprietary Stormwater Treatment Filters. Stormwater filters consist of porous material that filters runoff to remove certain types of contaminants. The filter is typically composed of one or more media, such as sand, gravel, compost, peat, or a specially designed filter fabric. Filters can remove smaller particulate matter that passes through screens or cannot be settled out. Depending on the type of media used, filters can also remove metals, nutrients, and other soluble pollutants through sorption and other processes. Filters are available in various configurations (e.g., as an insert to a catch basin) and sizes from several manufacturers, and are installed underground. Maintenance includes periodic replacement of spent filter media and removal of debris and sediments from the unit. Typical pollutant removal rates for sand and other media filters are shown in **Table 4.7-11.** Specific project components that will use proprietary stormwater filters will be determined during detailed design.

Grassed Swales and Other Vegetated Surfaces. Vegetated surfaces such as grassed swales can trap sediments as stormwater passes through the area. Grassed swales are broad, shallow channels with a dense stand of vegetation such as grass covering the surface. Vegetated swales are designed to slowly convey runoff and in the process trap pollutants and reduce flow velocities. Grassed swales can be used to provide pretreatment prior to discharging to other stormwater devices. Vegetated surfaces can also be graded so that stormwater is collected within the vegetated area, and ultimately infiltrates into the onsite soils to recharge groundwater (retention grading – see below). Typical pollutant removal rates for grassed swales are shown in **Table 4.7-11.** Grassed swales or vegetated surfaces with retention grading are proposed for the following project components: Stonehurst Park, Sun Valley Middle School, and New Park on Wentworth.

Infiltration through Soils (Infiltration Basins, Subsurface Infiltration Devices, Dry Wells, and Retention Grading). In most of the project components, the collected stormwater will be infiltrated into the ground to provide groundwater recharge. For the purpose of protecting surface water quality, infiltration is the most effective method of stormwater treatment since it eliminates the discharge of runoff and associated pollutants into receiving waters. Infiltration through soils is also an important mechanism for protecting groundwater quality. Heavy metals, nutrients, many organic pollutants, and bacteria are intercepted during the infiltration process by filtration, adsorption, and microbial decomposition, and are prevented from reaching the underlying groundwater in most cases (Pitt et al., 1996). The types of facilities that will be used for stormwater infiltration under the proposed project include infiltration basins, subsurface infiltration devices, dry wells, and retention grading. These facilities are described in **Section 4.7.4.2**.

Table 4.7-11
Typical Pollutant Removal Rates of Stormwater Treatment Methods

Type of Treatment Method	Typical Pollutant Removal (Percent)				
	Suspended Solids	Nitrogen	Phosphorus	Pathogens	Metals
Sedimentation Basins	30 - 65	15 - 45	15 - 45	< 30	15 – 45
Constructed Wetlands	50 - 80	< 30	15 - 45	< 30	50 – 80
Infiltration Basins	50 - 80	50 - 80	50 - 80	65 - 100	50 – 80
Dry Wells	50 - 80	50 - 80	15 - 45	65 - 100	50 - 80
Grassed Swales	30 - 65	15 - 45	15 - 45	< 30	15 - 45
Surface Sand Filters	50 - 80	< 30	50 - 80	< 30	50 - 80
Other Media Filters	65 - 100	15 - 45	< 30	< 30	50 - 80

Source: EPA, 1999a.

Disinfection. Stormwater collected by the proposed facilities would be disinfected to meet Title 22 standards for bacteria before being reused for irrigation or other uses with the potential for public contact (see **Section 4.7.2.2** for additional information on Title 22 standards). Body contact recreation is not an intended use of the lakes proposed for the Strathern Pit and Cal Mat Pit components. It is anticipated that Ultraviolet (UV) irradiation or sodium hypochlorite would be used for disinfection. UV disinfection does not involve use of hazardous materials and would not have any impacts on water quality. Liquid sodium hypochlorite, a concentrated form of household bleach, is a commonly used chemical for disinfecting water.

4.7.4.2 Infiltration

The majority of the stormwater collected under the proposed project would be infiltrated. **Table 4.7-12** presents the amount of water to be infiltrated in a year of average rainfall by individual project components and the total for each alternative. Implementation of Alternative 3 would result in infiltration of approximately 1,400 acre-feet per year of stormwater. Alternatives 1, 2 and 4 would infiltrate approximately 2,000 acre-feet of stormwater collected from within the Sun Valley Watershed. Alternative 2 would infiltrate an additional 6,000 acre-feet of the flows diverted from Tujunga Wash into Sheldon Pit.

The types of facilities that will be used for stormwater infiltration under the proposed project are infiltration basins, subsurface infiltration devices, dry wells, and retention grading. Some project components will use a combination of one or more types. These facilities are described below.

Infiltration Basins. Infiltration basins are designed to capture and hold runoff temporarily and gradually infiltrate it through the bottom of the basins. Proposed project components with infiltration basins are: Cal Mat Pit, Sheldon Pit, Valley Steam Plant, and Power Line Easement.

Subsurface Infiltration Devices. Subsurface infiltration devices collect runoff from the surface (e.g., a parking lot or a playing field) via catch basins and slowly infiltrate it into the ground. The facilities consist of perforated chambers that allow stormwater to be temporarily stored underground prior to infiltration into the underlying soils. Subsurface infiltration devices are proposed for the following project components: Sun Valley Middle School, Parking Lot on Sherman, Stonehurst Elementary School, and Roscoe Elementary School. In addition, subsurface infiltration devices may be used at some of the residential and commercial properties participating in the Onsite BMPs component.

Dry Wells. Dry wells are excavated pits or trenches lined with gravel or other porous materials designed to infiltrate stormwater into the ground. Dry wells are proposed at Sun Valley Middle School and Power Line Easement. In addition, dry wells may be installed at some of the residential and commercial properties participating in Onsite BMPs.

Retention Grading. Retention grading involves excavating and/or grading an existing open space area (e.g., a park or playing field) to create a shallow depression of several feet, where runoff collects and gradually infiltrates through the soils. Depending on the amount of rainfall, water may pond in the depressed area temporarily before seeping into the ground. Retention grading is proposed at Stonehurst Park and New Park on Wentworth. In addition, retention grading may be used at some of the residential and commercial properties participating in Onsite BMPs.

Table 4.7-12
Annual Average Amount of Stormwater to be Infiltrated
(acre-feet)

Project Component	Method of Infiltration	Alternative			
		1	2	3	4
Cal Mat Pit	Infiltration Basins	--	--	330	330
New Park on Wentworth	Retention Grading	11	--	--	--
Onsite BMPs (Residential and Commercial Properties)	Subsurface Infiltration Devices Retention Grading Dry wells	37	56	37	25
Parking Lot on Sherman	Subsurface Infiltration Devices	125	57	--	115
Power Line Easement	Infiltration Basins Dry Wells	613	596	526	692
Roscoe Elementary School	Subsurface Infiltration Devices	6	--	--	--
Sheldon Pit (= Tujunga Wash Diversion + Runoff from within Watershed)	Infiltration Basins	--	6,303* (6,000 + 303)	--	--
Stonehurst Elementary School	Subsurface Infiltration Devices	6	--	--	--
Stonehurst Park	Retention Grading	41	--	--	--
Storm Drains	None	0	0	0	0
Strathern Pit	Subsurface Infiltration Devices	895**	649**	0	595**
Street Storage	Subsurface Infiltration Devices	61	113	278	50
Sun Valley Middle School	Subsurface Infiltration Devices Dry Wells	25	25	25	25
Sun Valley Park	Retention Grading	38	38	38	38
Tree Planting and Mulching	None	~0	~0	~0	~0
Tuxford Green	None	0	0	0	0
Valley Steam Plant	Infiltration Basins	184	184	184	184
Vulcan Gravel Processing Plant	None	0	0	0	0
Total		**2,042**	**2,021 + 6,000 = 8,021***	**1,418**	**2,054**

~ 0 Negligible
-- Project component not included in the alternative
* In Alternative 2, a total of 8,021 acre-feet of water would be infiltrated, consisting of 2,021 acre-feet of stormwater collected within the watershed and 6,000 acre-feet of stormwater transferred from Tujunga Wash.
** Infiltration in Tujunga Spreading Grounds

4.7.4.3 Reuse

While most of the collected stormwater will be infiltrated, some is proposed for reuse at various locations throughout the watershed. **Table 4.7-13** presents the annual average amount of water to be reused by individual project components and the total for each alternative. Implementation of Alternatives 1, 2, and 4 would result in similar amounts of stormwater reuse, ranging from 70 to 102 acre-feet per year. Alternative 3 would result in the largest reuse (over 700 acre-feet per year).

Reuse at Vulcan Gravel Processing Plant. Based on a survey of potential users of non-potable water in the project area, Vulcan Gravel Processing Plant was found to be the largest potential user by far, accounting for more than 80 percent of the area's potential demand (see Technical Memorandum No. 5). The plant's water demand is approximately 3,500 acre-feet per year. Most of the plant's water use is for gravel washing; other uses include dust control and irrigation. Currently, the plant obtains its water from three different sources: three onsite wells, a connection to LADWP's potable water line, and exposed groundwater pumped from Sheldon Pit. During the gravel washing process, the water does not come in contact with oil, grease, solvents, or other chemicals (J. Dean, pers. comm., 2004). Gravel wash wastewater from the Vulcan Gravel Processing Plant is currently discharged with minimal pretreatment into the portion of Sheldon Pit that has exposed groundwater. Groundwater has been exposed in this portion due to excavation from past gravel mining activities.

Under all four alternatives, stormwater to be collected at the proposed retention basins in Vulcan Gravel Processing Plant would be reused onsite. This would result in approximately 45 acre-feet of water reuse per year. In addition to the reuse of water collected onsite, Alternative 3 proposes to use all of the stormwater collected in Strathern Pit at the Vulcan Gravel Processing Plant. The average amount to be reused under this component is over 600 acre-feet per year. A 4,800-foot pipeline and a pump would be constructed underground within existing roadways to transfer the collected stormwater from Strathern Pit to the Vulcan Gravel Processing Plant.

Reuse for Irrigation of Landscaped Areas. Residential, commercial, and industrial properties that install cisterns under the Onsite BMPs program are expected to reuse some of the collected rainfall for onsite irrigation of landscaped areas. Reuse of stormwater runoff for larger-scale irrigation may occur at other project components (e.g., Tuxford Green and Sun Valley Middle School) for existing or proposed landscaped areas. As described above in **Section 4.7.4.1**, stormwater to be reused for spray irrigation at these larger landscaped areas will be disinfected in accordance with Title 22 standards.

Table 4.7-13
Annual Average Amount of Stormwater to be Reused
(acre-feet)

Project Component	Alternative			
	1	2	3	4
Cal Mat Pit	--	--	0	0
New Park on Wentworth	0	--	--	--
Onsite BMPs	37	57	38	25
Parking Lot on Sherman	0	--	--	0
Power Line Easement	0	0	0	0
Roscoe Elementary School	0	--	--	--
Sheldon Pit Total	--	0	--	--
Stonehurst Elementary School	0	--	--	--
Stonehurst Park	0	--	--	--
Storm Drains	0	0	0	0
Strathern Pit	0	0	623*	0
Street Storage	0	0	0	0
Sun Valley Middle School	~0	~0	~0	~0
Sun Valley Park	0	0	0	0
Tree Planting and Mulching	0	0	0	0
Tuxford Green	~0	~0	~0	~0
Valley Steam Plant	0	0	0	0
Vulcan Gravel Processing Plant	45	45	45	45
Total	**82**	**102**	**706**	**70**

~ 0 Negligible
-- Project component not included in the alternative
* Reuse at Vulcan Gravel Processing Plant

4.7.5 Significance Criteria

Project impacts related to water quality would be considered significant if the project:

- Altered the existing drainage pattern of the site or area in a manner which would result in substantial erosion or siltation
- Resulted in substantial degradation of water quality or exceedance of the established water quality objectives for a surface water feature or groundwater basin

4.7.6 Impacts

The following sections address project impacts on water quality:

- Construction impacts on surface water quality
  - General construction impacts
  - Construction impacts on Tujunga Wash (Alternative 2 only)
- Operational impacts on surface water quality
- Operational impacts on groundwater quality
  - General impacts of stormwater infiltration
  - Impacts from potential soil contamination at infiltration sites
  - Impacts related to groundwater hydrology
  - Impact on exposed groundwater at Sheldon Pit
  - Impact related to infiltration at Tujunga Spreading Grounds (Alternatives 1, 2, and 4 only)

4.7.6.1 Construction Impacts on Surface Water Quality

General Construction Impacts. During project construction, soil disturbance from earth moving activities would temporarily increase the potential for soil erosion. In addition, during the rainy season, construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) may come in contact with runoff. If appropriate measures are not taken to minimize the release of sediments and other materials from construction sites, this could result in a temporary but significant impact on surface water quality.

As required by the EPA and the Regional Board, the construction contractors will develop and implement a Stormwater Pollution Prevention Plan (SWPPP) during construction of project components. This plan is required as part of the NPDES Permit for discharge of stormwater associated with construction activities greater than 1 acre in area. Incorporation of stormwater best management practices in the SWPPP would reduce the potential for soil erosion and release of other pollutants during construction. Specific control measures to be considered for inclusion in site-specific SWPPPs are listed below in **Mitigation Measure W-1**. With the incorporation of such control measures in the SWPPPs, construction impacts on surface water quality are expected to be less than significant.

Construction Impacts on Tujunga Wash (Alternative 2). The Sheldon Pit project component includes modification of Tujunga Wash to divert flood flows into the proposed retention basins at Sheldon Pit. The proposed modification would include lowering the existing concrete channel bottom of Tujunga Wash by approximately 10 feet to capture a portion of the storm flows. Captured flows would be diverted into the proposed Sheldon Pit retention area through a 4-foot-high by 7-foot-wide reinforced concrete box culvert. Additional channel modifications may be necessary upon further hydrologic and hydraulic analysis.

Construction of the diversion structure would involve excavation of the concrete channel of the Tujunga Wash, resulting in a temporary increase in the potential for soil erosion and release of sediments in the event of a storm.

As part of detailed design for the Sheldon Pit component, the U.S. Army Corps of Engineers, Regional Board, and California Department of Fish and Game will be consulted regarding the proposed modification of Tujunga Wash. All necessary federal and state approvals, including CWA Section 404 permit and CWA Section 401 water quality certification or waiver will be obtained prior to the implementation of construction activities (see **Section 4.2.3**). Any conditions of agency approvals (e.g., measures to minimize the potential water quality impacts associated with the channel modification) will be incorporated into the design of the Sheldon Pit component. Project modifications to Tujunga Wash are expected to result in less than significant impacts on water quality.

4.7.6.2 Operational Impacts on Surface Water Quality

Under existing conditions, approximately 2,000 acre-feet of runoff are generated within the watershed in an average rainfall year and discharged into the Los Angeles River (see **Section 4.7.2.1**). Construction of the proposed stormwater retention facilities would substantially reduce the amount of runoff currently discharged to the River (see **Section 4.6.5.1**). Alternatives 1, 2, and 4 would each prevent approximately 2,000 acre-feet of runoff generated within the watershed from being discharged into the River. Alternative 2 would prevent approximately 2,000 acre-feet runoff generated within the watershed plus 6,000 acre-feet of storm flows conveyed by Tujunga Wash from reaching the Los Angeles River. Therefore, under all alternatives, nearly all of the runoff generated from the watershed in a year of average rainfall would be retained and prevented from entering the Los Angeles River. In addition to providing flood control, runoff retention would eliminate the stormwater pollutants currently discharged from these areas. This would contribute substantially to the City of Los Angeles' efforts to reduce non-point sources of pollution and meet existing and future TMDLs for the Los Angeles River. Therefore, implementation of the project would have a beneficial impact on the water quality of the Los Angeles River through reduction of stormwater pollution.

In addition, operation of the project would result in reduced potential for soil erosion at some of the project component sites. Once construction is complete, the surface at each project site would be, at a minimum, restored to its original condition (i.e., paved or sodded). Some of the proposed project components (i.e., New Park on Wentworth, Sheldon Pit, Cal Mat Pit, Strathern Pit, Tuxford Green, and Power Line Easement) currently have unimproved surfaces that are prone to soil erosion. Implementation of the project would reduce the soil erosion potential at these sites by increasing the vegetative cover and modifying the site topography to retain runoff onsite. Therefore, the project is expected to have a beneficial impact with respect to soil erosion once construction has been completed.

4.7.6.3 Operational Impacts on Groundwater Quality

4.7.6.3.1 General Impacts of Stormwater Infiltration

Introduction. Under the proposed project, stormwater would be infiltrated to recharge the SFB using various project components (see **Table 4.7-12**). The amounts of infiltration proposed under the four alternatives in a year of average rainfall are: 2,000 acre-feet for Alternatives 1 and 4; 1,400 acre-feet for Alternative 3; and 8,000 acre-feet for Alternative 2. This represents approximately 7 percent, 5 percent, and 27 percent, respectively, of the long-term annual average amount of infiltration at existing spreading grounds in the SFB (30,000 acre-feet).

Infiltration is a desirable way of managing urban runoff since it contributes to groundwater recharge, reduces pollutant discharges to downstream surface waters, and reduces downstream flooding. However, as discussed above in **Section 4.7.2.3**, urban runoff can contain various pollutants, and therefore stormwater infiltration practices need to address the potential adverse effects on groundwater quality. Review of previous studies indicates that infiltration of stormwater generally does not pose considerable risk of groundwater contamination, given sufficient soil depth and proper design and maintenance of infiltration facilities (LASGRWC, 2002). However, if site-specific conditions are not taken into account in designing and operating stormwater infiltration facilities, certain pollutants do have the potential to reach groundwater (LASGRWC, 2002).

Factors Contributing to Groundwater Contamination Potential of Stormwater Infiltration Practices. Whether or not stormwater infiltration can have an adverse effect on groundwater quality depends on the pollutants of concern and site-specific factors including: drainage area land use and associated stormwater quality, distance to groundwater from the point of infiltration, soil characteristics, and level of treatment that occurs prior to infiltration (Pitt et al., 1996). Below is a description of these factors with references to known or anticipated site conditions in the project area.

Pollutants of Concern. Pitt, et al. (1996) conducted an extensive literature review of studies investigating the potential groundwater impacts from infiltrating stormwater. Based on the literature review and consideration of factors such as solubility, mobility, and general abundance in stormwater, the authors evaluated the groundwater contamination potential of various pollutants associated with stormwater infiltration practices. **Table 4.7-14** presents a summary of their findings. In general, stormwater pollutants that present higher risks of groundwater contamination are those that are highly soluble and have high mobility in the vadose zone (Pitt, et al., 1996). Such pollutants are more likely to remain dissolved in water and travel through the soil and reach the water table. Based on solubility and mobility, pollutants with high groundwater contamination potential are nitrate, certain organics such as VOCs and PAHs, viruses, some metals, and chloride (see **Table 4.7-14**). Organics, and metals are known to be present in stormwater from county-wide samples and samples from the project area (see **Section 4.7.2.3** and **Table 4.7-5**). However, chloride and nitrate are not anticipated to be pollutants of concern in infiltrated stormwater for the proposed project. The primary manmade source of chloride in stormwater is road salts used in colder climates. Observed levels of nitrate in stormwater in county-wide and Sun Valley samples are well below Basin Plan objectives and the drinking water MCL. Filtration and adsorption during stormwater treatment and infiltration under the proposed project will further remove nitrate.

Although very high levels of bacteria can be found in stormwater, bacteria are intercepted during the infiltration process by filtration, adsorption, and microbial decomposition, and are prevented from reaching the underlying groundwater in most cases (Pitt et al., 1996).

Table 4.7-14
Groundwater Contamination Potential of Stormwater Pollutants

Pollutant	Mobility (In sandy, low-organic soils)	Solubility (Fraction Filterable)	Abundance in Stormwater	Contamination Potential		
				Surface Infiltration without Pretreatment	Subsurface Infiltration with Sedimentation	Subsurface Injection with Minimal Pretreatment
Nutrients						
nitrate	mobile	high	low/moderate	low/moderate	low/moderate	low/moderate
Pesticides						
chlordane	intermediate	very low	moderate	moderate	low	moderate
lindane	intermediate	likely low	moderate	moderate	low	moderate
VOCs	mobile	very high	low*	low*	low*	low*
Other Organics						
1,3-dichlorobenzene	low	high	high	low	low	low
benzo(a)anthracene	intermediate	very low	moderate	moderate	low	moderate
bis (2-ethylhexyl) phthalate	intermediate	likely low	moderate	moderate	low?	moderate
fluoranthene	intermediate	high	high	moderate	moderate	high
pentachlorophenol	intermediate	likely low	moderate	moderate	low?	moderate
phenanthrene	intermediate	very low	moderate	moderate	low	moderate
pyrene	intermediate	high	high	moderate	moderate	high
Pathogens						
enteroviruses	mobile	high	likely present	high	high	high
Shigella	low/intermediate	moderate	likely present	low/moderate	low/moderate	high
Pseudomonas aeruginosa	low/intermediate	moderate	very high	low/moderate	low/moderate	high
protozoa	low/intermediate	moderate	likely present	low/moderate	low/moderate	high
Heavy Metals						
nickel	low	low	high	low	low	high
chromium	intermediate/very low	very low	moderate	low/moderate	low	moderate
lead	very low	very low	moderate	low	low	moderate
zinc	low/very low	high	high	low	low	high
Salts						
chloride	mobile	high	seasonally high**	high	high	high

Source: Modified from Pitt, et al., 1996.
* High in industrial and commercial facilities such as vehicle service establishments.
** For cold climate areas where road salts are used for deicing.

Drainage Area Land Use. Runoff generated from residential areas is generally less polluted than runoff from other land uses, and is considered appropriate for infiltration, especially if surface infiltration is used (Pitt, et al., 1996). Runoff from industrial land uses can contain high concentrations of soluble toxicants such as metals and organics, and require caution and pretreatment if it is used for infiltration (Pitt, et al., 1996).

The project area is highly urbanized and includes residential, commercial, and industrial uses. The drainage area land use for individual project components varies by location. Residential land uses dominate in the drainage areas for the following project components: Sheldon Pit, Cal Mat Pit, New Park on Wentworth, Roscoe Elementary School, Stonehurst Elementary School, Stonehurst Park, Power Line Easement, Street Storage, and Sun Valley Middle School. The drainage areas for the following project components consist primarily industrial and commercial land uses: Parking Lot on Sherman, Strathern Pit, Tuxford Green, Valley Steam Plant, and Vulcan Gravel Processing Plant. In these areas, runoff can be expected to contain higher concentrations of heavy metals and organics.

Depth to Groundwater. The vadose zone (layer of soil above the water table and below the ground surface; also called the unsaturated zone) provides an important pollutant removal mechanism and protects the water table from direct contamination. Therefore, the bottom of the infiltration area should be well above the seasonal high water table. Sites where the groundwater surface is less than 4 feet below the infiltration surface, or where very sandy soils with low organic content exist, are least suitable for groundwater recharge unless runoff is first treated to remove pollutants (Urbonas and Stahre, 1993). In areas where background metals are present in the soil, depth to groundwater should not be less than 10 feet below the infiltration device (Hathhorn and Yonge, 1995). Surface devices are generally preferable to subsurface infiltration systems (e.g., dry wells) since surface infiltration takes greater advantage of pollutant removal processes in the vadose zone (Pitt, et al., 1996).

In general, groundwater levels in the project area range from over 250 feet to 100 feet bgs (see **Section 4.7.3.1**). Locations where the water table may be closer to the surface are the bottoms of the gravel pits (i.e., Sheldon Pit, Cal Mat Pit, and Strathern Pit). For example, the southern portion of Sheldon Pit has been excavated to a level where groundwater is exposed to the surface. However, direct infiltration of stormwater is not proposed in the portion of Sheldon Pit with exposed groundwater. At Cal Mat Pit, a 10-foot layer of gravel and sand will be placed at the bottom of the pit prior to establishing the proposed infiltration basin. At Strathern Pit, the proposed stormwater facilities will be lined with impervious materials (e.g., clay or geotextiles) so that no onsite infiltration occurs. Stormwater collected at Strathern Pit will be treated using sedimentation basins and constructed wetlands, then transferred to an offsite location for reuse (i.e., at Vulcan Gravel Processing Plant) or infiltration (at Tujunga Spreading Grounds). Therefore, the existing depth to groundwater is anticipated to be sufficiently large at all project component sites.

Vadose Zone Soil Properties. Properties of the vadose zone soil can affect its effectiveness in pollutant removal. Sandy soils with low organic matter content have lower pollutant removal capacities than clayey soils with high organic content (Pitt, et al., 1996). Soils with a higher proportion of clay and organic matter have greater capacity for removing metals and organic compounds by sorption processes.

The soils in the project area consist of alluvial deposits, primarily medium- to coarse-grained sand, gravel, and boulders, with scattered deposits of fine-grained materials (see **Section 4.4.1**). The coarse and highly permeable nature of the project area's subsurface geology provides suitable conditions for groundwater recharge operations. However, it also makes the underlying groundwater more susceptible to contamination since pollutant removal via sorption is less likely to occur than in soils with higher clay and organic matter content.

Treatment Prior to Infiltration. Many types of stormwater pollutants, including metals and organics, are bound to particulates that can be removed through settling or filtering processes. Therefore, treatment methods designed to remove particulate pollutants (e.g., stormwater separation devices, sedimentation basins, and vegetated surfaces) reduce the risk of groundwater contamination (Pitt, et al., 1996). In addition, treating for sediment removal prior to infiltration prevents infiltration systems from becoming clogged and maintains their performance.

As described in **Section 4.7.4.1**, the proposed project will use a combination of stormwater treatment methods to remove pollutants from stormwater prior to infiltration. At the concept design phase, a combination of treatments has been proposed for each project component based on the expected quality of influent stormwater (drainage area land use) and ultimate use of the collected stormwater (groundwater recharge, reuse for gravel washing, or reuse for irrigation). The number and types of treatment processes included for each project component may be modified during the detailed design phase as necessary.

Conclusion. With the proposed treatment prior to infiltration, use of stormwater for groundwater recharge under the project is not expected to result in groundwater contamination. Treatment methods designed to remove suspended solids and floatables (e.g., oil and grease) are expected to remove many of the pollutants (e.g., heavy metals and organics) that are sorbed onto particulates. For project components that include industrial land uses in the drainage areas, additional treatment, including constructed wetlands and use of proprietary stormwater filters, will be used to further improve water quality. Some of the dissolved constituents that are not removed in treatment processes prior to infiltration will be further removed in the vadose zone as water infiltrates into the soils. While the coarse and permeable nature of the project area soils is not highly conducive to pollutant removal, the depth of the vadose zone in the project area is anticipated to be sufficient to protect the groundwater. **Table 4.7-15** summarizes the potential for groundwater impacts associated with stormwater infiltration for each project component.

Project impacts on groundwater quality from pollutants in stormwater are anticipated to be less than significant. The proposed Phase 1 project components, which are intended to be completed in a relatively short timeframe (1 to 3 years), include a comprehensive stormwater and groundwater quality monitoring program (see **Section 3.6.1**). Results of the monitoring for Phase 1 project components will be used to assess the effectiveness of the proposed stormwater treatment methods in protecting both surface and groundwater. Information obtained from the

Phase 1 monitoring program will be incorporated into the detailed design of subsequent project components to address any groundwater quality impact concerns that might arise during operation of Phase 1 project components. **Mitigation Measure W-2** will be implemented to coordinate with the stakeholders the review of monitoring results and determination of the necessity of additional stormwater treatment.

Table 4.7-15
Potential for Groundwater Quality Impacts Associated with Stormwater Infiltration

Project Component	Infiltration Method		Annual Average Infiltration (acre-feet/year)	Primary Land Uses of the Drainage Area		Potential for Direct Impacts on Groundwater Quality from Stormwater Infiltration*
	Surface	Subsurface		Residential and/or Open Space	Commercial and/or Industrial	
Cal Mat Pit	X		330	X		Limited potential (Quality of runoff is expected to be high.)
New Park on Wentworth	X		11	X		Very limited potential (Infiltration will occur through a vegetated surface, infiltration amount is small, and quality of runoff is expected to be high.)
Onsite BMPs	X	X	25 – 56	X	X	Limited potential (Infiltration amount is small per each participating property. In industrial properties, only cisterns will be used as Onsite BMPs (i.e., infiltration methods such as dry wells or subsurface infiltration devices will not be used).
Parking Lot on Sherman		X	57 – 125		X	Low potential (Stormwater separation devices and shallow subsurface sedimentation tanks will be used prior to infiltration.)
Power Line Easement	X		526 – 692	X		Limited potential (Sedimentation basins will be used to treat runoff prior to infiltration, and quality of runoff is expected to be high.)
Roscoe Elementary School	X		6	X	X	Limited potential (Infiltration amount is very small.)
Sheldon Pit	X		6,000 + 303	X		Very limited potential (Sedimentation basins and treatment wetlands will be used to treat runoff prior to infiltration. Quality of runoff is expected to be very high for the water diverted from Tujunga Wash (runoff from San Gabriel Mountains; 6,000 acre-feet/year) and high for the runoff generated within the residential/open space areas of the watershed (303 acre-feet/year). Vadose zone to be constructed.)
Stonehurst Elementary School		X	6	X		Very limited potential (Infiltration amount is very small, and quality of runoff is expected to be high.)
Stonehurst Park	X		41	X		Very limited potential (Infiltration will occur through a vegetated surface, infiltration amount is small, and quality of runoff is expected to be high.)
Storm Drains	None			N/A		N/A

* A qualitative scale (ranging from none, very limited, limited, low, moderate, to high) was used to describe the potential for direct impacts on groundwater quality from stormwater infiltration.

Table 4.7-15 (Continued)
Potential for Groundwater Quality Impacts Associated with Stormwater Infiltration

Project Component	Infiltration Method		Annual Average Infiltration (acre-feet/year)	Primary Land Uses of the Drainage Area		Potential for Direct Impacts on Groundwater Quality from Stormwater Infiltration*
	Surface	Subsurface		Residential and/or Open Space	Commercial and/or Industrial	
Strathern Pit	X (offsite)		595 – 895 (offsite)		X	Low potential. (A large volume of water from commercial/industrial drainage area will be infiltrated. However, sedimentation basins and treatment wetlands will be used to treat runoff prior to infiltration.)
Street Storage		X	50 – 278	X	X	Low potential (Stormwater separation devices and shallow subsurface sedimentation tanks will be used prior to infiltration. Infiltration will occur through a 6-foot layer of gravel.)
Sun Valley Middle School		X	25	X		Limited potential (Infiltration amount is small. Runoff will travel over vegetated surfaces prior to being infiltrated via subsurface devices.)
Tree Planting and Mulching	X		Negligible	X	X	Very limited potential (Infiltration amount is negligible.)
Tuxford Green	None					N/A
Valley Steam Plant	X		184		X	Low potential (Sedimentation basins will be used to treat runoff prior to infiltration. Infiltration will occur through the surface.)
Vulcan Gravel Processing Plant	Discharged to exposed groundwater at Sheldon Pit		45		X	Low potential (A small amount of volume from a commercial/industrial drainage area will be infiltrated. However, sedimentation basins will be used to treat runoff prior to reuse for gravel washing.)
Potential impacts applicable to all project components	See **Section 4.7.6.3.2** for discussion of impacts related to potential soil contamination at infiltration sites. See **Section 4.7.6.3.3** for discussion of impacts related to potential changes in groundwater hydrology.					

* A qualitative scale (ranging from none, very limited, limited, low, moderate, to high) was used to describe the potential for direct impacts on groundwater quality from stormwater infiltration.

4.7.6.3.2 Impacts from Potential Soil Contamination at Infiltration Sites

As described in **Section 4.5.1.2**, two of the proposed project components (Sun Valley Middle School and Parking Lot on Sherman) are located on sites where leaking underground storage tanks have been identified. Therefore, there is potential for soil contamination at these two sites. In addition, due to the highly urbanized environment and the presence of industrial land uses in the project area, there is also potential for contaminated soils to be present at the other project component sites.

If stormwater were infiltrated in large amounts through contaminated soils and caused toxicants to leach out into the underlying groundwater, this would be considered a significant impact on groundwater quality. Implementation of **Mitigation Measure H-1** (see **Section 4.5.4**) will reduce this potential impact to a less than significant level. Mitigation Measure H-1 consists of conducting Phase I Environmental Site Assessment (ESA) (for all project components except Onsite BMPs, Tree Planting & Mulching, and Storm Drains) to determine the site-specific potential for soil contamination. If the Phase I ESA concludes that there is no substantial potential for soil contamination, no further action would be required. If the Phase I ESA indicates that there is potential for soil to be contaminated, additional investigation (including soil sampling and analysis) will be conducted to determine the presence and extent of the contamination. If the proposed project would involve disturbance of soil in the contaminated area, soil would be removed and disposed of in compliance with applicable regulations at approved disposal sites. Incorporation of Mitigation Measure H-1 would minimize the potential for stormwater to be infiltrated through contaminated soils. The impact would then be less than significant as mitigated.

4.7.6.3.3 Impacts Related to Groundwater Hydrology

Project-Related Groundwater Hydrology Issues. Project-related infiltration of stormwater would result in beneficial impacts on groundwater elevations of the SFB by providing additional recharge. However, concerns were raised that the proposed infiltration could have unintended but adverse consequences with respect to groundwater hydrology (groundwater elevations and flow directions). The two issues of concern are described below, followed by a summary of the results of groundwater modeling conducted to address these concerns.

The first issue of concern is that the proposed infiltration may raise the groundwater level underneath Bradley Landfill and inundate some of the landfill materials. Bradley Landfill, owned and operated by Waste Management Inc., is an active municipal landfill located in the northern portion of the project area (**Figure 4.7-1**). An eastern portion of the landfill (south of the intersection of Glenoaks Boulevard and Peoria Street) is unlined. If project-related infiltration of stormwater raised the groundwater level underneath the landfill and inundated the unlined portion, this could cause contaminants from the landfill materials to leach into groundwater. To ensure that existing groundwater recharge operations at nearby spreading grounds in SFB do not inadvertently inundate the landfill materials, the Regional Board, Waste Management Inc., ULARA Watermaster, and LACDPW have jointly established a monitoring well "alert level" beneath the landfill at 745 feet above mean sea level (msl). If groundwater elevations in monitoring wells at the landfill site reach 745 feet msl, recharge at nearby spreading grounds are temporarily reduced or discontinued until the water table falls.

The second concern is that the proposed infiltration may affect the flow directions of the groundwater within SFB and consequently change the shape and configuration of the existing TCE and PCE contamination plumes (see **Section 4.7.3.4** above). If such an effect on the contamination plumes occurred, it could interfere with the ongoing remediation and cleanup efforts.

Background Information on the Groundwater Modeling. To address groundwater hydrology issues, LADWP conducted groundwater modeling for the proposed project in 2003, using the SFB Groundwater Flow Model (Flow Model). The modeling report prepared by LADWP (2003) is included as **Appendix H**. The objectives of the modeling were to: 1) evaluate the effect of the proposed recharge on the groundwater elevations and flow directions in the SFB, and 2) qualitatively determine if the project-related effects on groundwater hydrology, if any, would change the shape and configuration of the existing contaminant plumes or inundate local existing landfills.

The Flow Model is a three-dimensional groundwater model used by LADWP to estimate how groundwater elevations and flow directions in the SFB would change in response to future recharge and pumping activities. The Flow Model was originally developed in 1992 as part of the remedial investigation conducted by LADWP (under a Cooperative Agreement with EPA) to assess the TCE and PCE contamination in the SFB (see **Section 4.7.3.4**). The Flow Model was developed using the MODFLOW program based on the geologic, hydrogeologic, and water quality characteristics of the SFB collected during the remedial investigation. Additional details on the Flow Model can be found in the remedial investigation report (LADWP, 1992).

Groundwater Modeling Methodology and Assumptions. To evaluate the effects of the proposed stormwater infiltration on SFB groundwater elevations and flow directions, LADWP used the Flow Model to perform a 10-year simulation for the following two scenarios:

Case 1: No project
Case 2: With infiltration of stormwater as proposed by the project

In both cases, the 1999-2000 water year was used as the baseline year for groundwater elevations. The Flow Model used in this assessment simulates the groundwater flow only within the saturated zone, and does not address the vadose zone.

In Case 1, the Flow Model was run for 10 years, assuming the following annual inflows into and outflows from SFB:

- Natural and man-made recharge of SFB:
  - Natural subsurface inflow from the adjacent Verdugo and Sylmar Basins (820 acre-feet/year)
  - Natural infiltration of direct precipitation on the valley floor (13,560 acre-feet/year)
  - Return flow recharge from imported water (54,825 acre-feet/year)

  - Groundwater recharge operations at the Tujunga, Hansen, Branford, Pacoima, and Lopez Spreading Grounds for the 2000-2001 water year (17,939 acre-feet/year; see **Table 4.7-6**)

- Total extractions from wells owned by LADWP, Glendale, Burbank and others within the SFB for the 2000-2001 water year (86,946 acre-feet/year)

In Case 2, the Flow Model was run for 10 years, assuming an infiltration of 8,327 acre-feet/year by the proposed project in addition to all the above model inputs used in simulating Case 1. The amount of 8,327 acre-feet/year represents the amount of stormwater that would be infiltrated under Alternative 2 in an average rainfall year (see **Table 4.7-12**). (The amount used as the input for the model is about 300 acre-feet greater than the proposed infiltration amount under Alternative 2 due to project description changes that were made after the modeling work had begun.) The infiltration amount proposed for Alternative 2 was used to run the model because it involves by far the greatest infiltration among the four alternatives, and therefore is the worst-case alternative in terms of potential groundwater hydrology impacts.

Subsequent to the model run, LADWP was informed that two of the sites provided as infiltration locations were incorrect. The model was run with Hansen Spreading Grounds and Bradley Landfill as infiltration locations, instead of the actual proposed infiltration locations (Sheldon Pit and Cal Mat Pit, respectively). However, LADWP has determined that the results of the modeling remain valid since the proposed infiltration sites and the modeled infiltration sites are located in close proximity to each other.

Groundwater Modeling Results. The groundwater contours simulated by the Flow Model for Case 1 and Case 2 are shown in **Figure 4.7-7** and **Figure 4.7-8**, respectively. The simulated groundwater contours for each case were superimposed over the year 2001 TCE contaminant plume map to allow for a qualitative evaluation of the effect of project-related recharge on the shape of the existing plume.

In the southeastern portion of SFB, the simulated groundwater elevations for the two cases are very similar. For example, average groundwater elevation at the Burbank OU wells, located just east of Burbank Airport, is 470 feet msl in both Case 1 and Case 2. However, in the area northwest of the Sun Valley watershed, the simulated elevations are somewhat different between Case 1 and Case 2. Under Case 1, the simulated elevations at Rinaldi-Toulca Wells and Tujunga Wells are 495 and 500 feet msl, respectively. In contrast, the simulated elevations under Case 2 are approximately 20 feet higher at 515 and 520 feet msl for Rinaldi-Toulca Wells and Tujunga Wells, respectively. In short, at the end of 10 years, project-related infiltration is expected to increase the groundwater elevations in areas upgradient of the Burbank OU wells by about 20 feet compared to the no-project scenario. In areas downgradient of the Burbank OU wells, the project is not expected to have a discernable effect on groundwater elevations.

The shapes of the simulated groundwater contours for the two cases are very similar. Based on a qualitative comparison of the two groundwater contours, LADWP has determined that project infiltration would not substantially alter groundwater flow direction in the SFB.

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Figure 4.7-7
Simulated 10-year Groundwater Contours and Flow Directions under Case 1 (No Project)

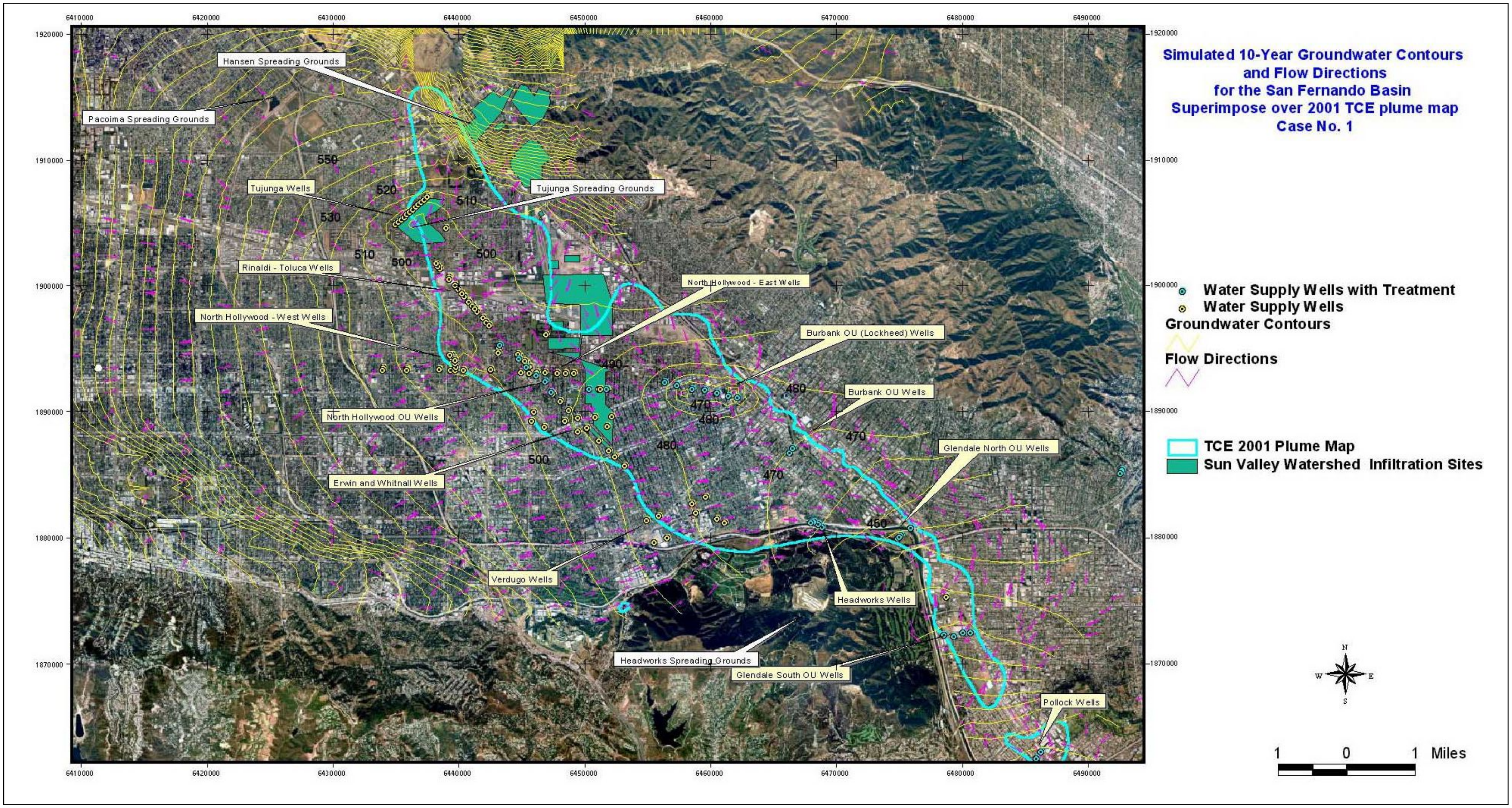
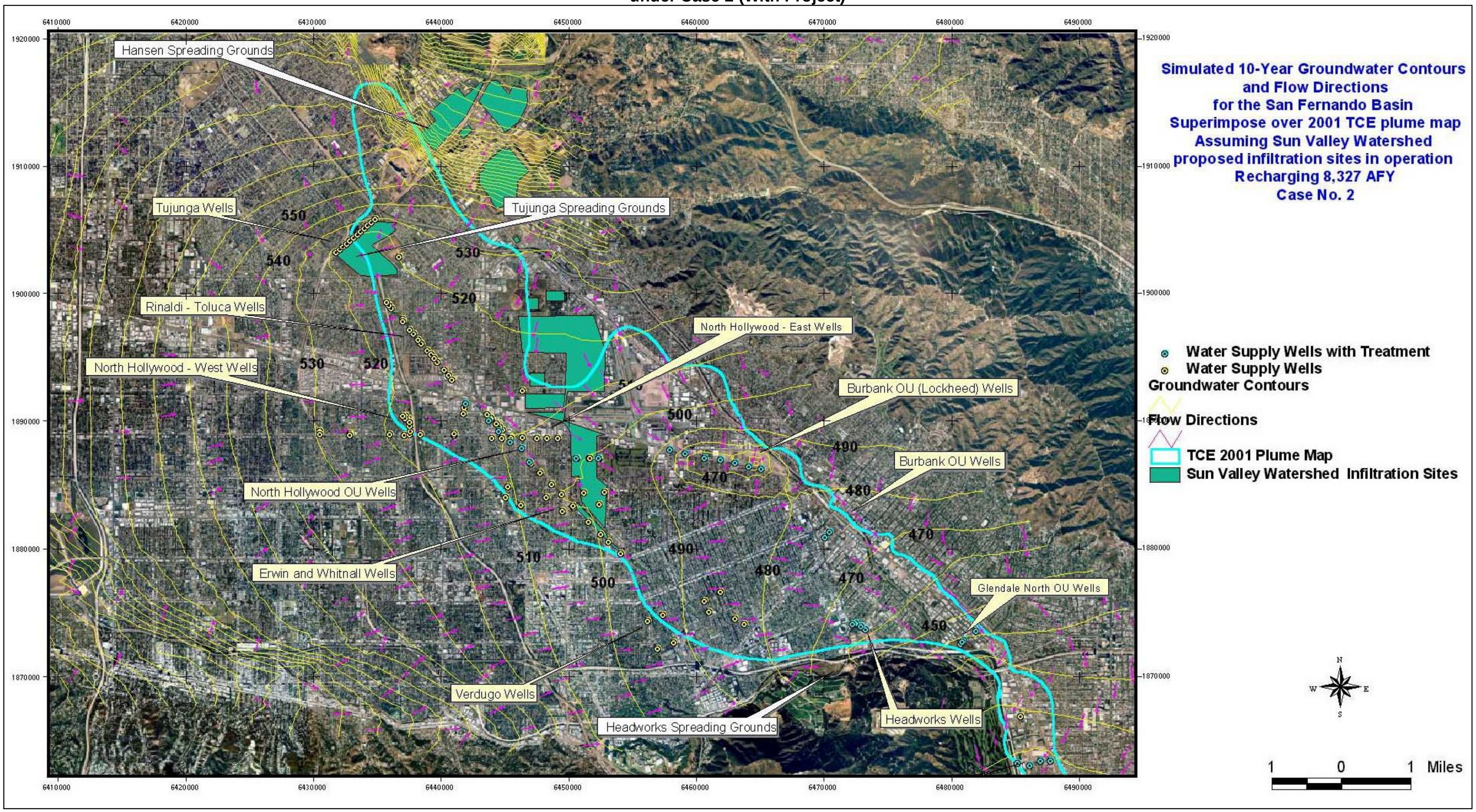


Figure 4.7-8
Simulated 10-year Groundwater and Flow Directions under Case 2 (With Project)



Impact on Landfills. Based on the model, after 10 years of stormwater infiltration under the proposed project, the groundwater elevation beneath Bradley Landfill is estimated to be approximately 690 feet msl, which is 55 feet below the "alert level" elevation of 745 feet msl. Therefore, the project infiltration is not expected to inundate the landfill materials. This is considered a less than significant impact. Since the Sheldon Pit component would provide the bulk of the infiltration proposed by the project, **Mitigation Measure W-3** will be implemented for Sheldon Pit in order to further reduce the potential for inundation of landfill materials.

In addition, other closed landfills (both inert waste and municipal solid waste) are located in the project area. Based on a review of the California Integrated Waste Management Board (CIWMB) Solid Waste Information System database (2004), the following known historical landfills were identified in or near the project area:

- Penrose Landfill (on Strathern Street between Tujunga Avenue and Irvine Avenue, located to the west of Strathern Pit)
- Tuxford Pit (at Tuxford Street and Golden State Freeway)
- Pendleton Street Landfill (on Pendleton Street between Glenoaks Boulevard and Sunland Boulevard)
- Greg Pit (at Pendleton Street and Norris Avenue)
- Victory-Vineland Landfill (at Victory Boulevard and Vineland Avenue)
- Branford Landfill (on Branford Street between San Fernando Road and Glenoaks Boulevard)
- Louis Visco Landfill (on Bradley Avenue between Tujunga Avenue and Tuxford Street)
- Tujunga Pit (on Tujunga Avenue between Strathern Street and Penrose Street)
- De Garmo Pit Landfill (on Randall Street and De Garmo Avenue)
- Glenoaks Dump (at Glenoaks Boulevard and Montague Street)

If groundwater infiltrated under the proposed Watershed Management Plan interacted with landfill materials, the impact to groundwater quality could be potentially significant. Implementation of **Mitigation Measure W-4** would reduce this impact to less than significant.

Impact on Existing Contaminant Plumes. The results of the Flow Model show that the proposed infiltration would not significantly alter the groundwater flow directions in SFB, and therefore would not substantially change the shape or configuration of the existing contaminant plume. Therefore, project infiltration would not interfere with the remediation and cleanup of the existing PCE and TCE contaminant plumes. This is considered a less than significant impact.

4.7.6.3.4 Impact on Exposed Groundwater at Sheldon Pit

All final four alternatives propose reuse of stormwater at the Vulcan Gravel Processing Plant for gravel washing. Stormwater to be reused at the plant would originate from one or more of the following sources: 1) retention basins to be constructed onsite at the plant (all alternatives), and 2) Strathern Pit (Alternative 3 only). The onsite retention basins would contribute approximately 45 acre-feet per year of water for reuse (approximately 1.3 percent of the plant's existing annual water use). In Alternative 3, Strathern Pit would contribute approximately 600 acre-feet per year (approximately 17 percent of the plant's existing annual water use). In all cases, the stormwater would be mixed with the water obtained from the plant's existing water sources (i.e., onsite wells, potable water, and groundwater pumped from Sheldon Pit).

As described in **Section 4.7.4.3**, gravel wash wastewater from the Vulcan Gravel Processing Plant is currently discharged into a portion of Sheldon Pit with minimal pretreatment. This practice is expected to continue after implementation of the proposed project (i.e., stormwater reused for gravel washing at Vulcan Gravel Processing Plant would be disposed of at Sheldon Pit). The portion of Sheldon Pit used for gravel wash wastewater disposal currently has exposed groundwater, and therefore lacks the layer of soil that normally protects groundwater from surface contamination sources.

Under the proposed project design, Sheldon Pit will be filled (with clean fill soils) to approximately 70 feet below street level, which would be approximately 90 feet above existing groundwater levels at this location. Therefore, after project implementation, groundwater will not be exposed at Sheldon Pit, and gravel wash water disposal will not occur in areas of exposed groundwater.

The proposed treatment for stormwater collected at Vulcan Gravel Processing Plant includes use of stormwater separation devices and sedimentation basins. At Strathern Pit, the collected stormwater would undergo treatment via stormwater separation devices, sedimentation basins, and constructed wetlands. The treated stormwater would be mixed with existing sources of gravel washwater (groundwater and potable water). In Alternatives 1, 2, and 4, treated stormwater would comprise less than 2 percent of the total washwater. In Alternative 3, less than 20 percent of the washwater volume would consist of treated stormwater.

As described above, the design of the Sheldon Pit project component will include filling the existing gravel pit with approximately 90 feet of soil, and therefore in effect creating a vadose zone. Furthermore, the combination of proposed stormwater treatment processes and mixing with existing sources of washwater is expected to substantially reduce the concentrations of pollutants contained in untreated stormwater. Therefore, the proposed stormwater reuse at Vulcan Gravel Processing Plant is not expected to result in significant impacts on groundwater quality. Additionally, implementation of **Mitigation Measure W-2** will ensure that implementation of this project component does not result in contamination of groundwater.

4.7.6.3.5 Impact related to Infiltration at Tujunga Spreading Grounds

The impact discussion below is relevant only to Project Alternatives 1, 2, and 4, which propose to use the stormwater collected in Strathern Pit for groundwater recharge at the Tujunga Spreading Grounds. The average amounts of stormwater proposed for recharge at the Tujunga Spreading Grounds range from 600 to 900 acre-feet/year (see **Table 4.7-12**), depending on the alternative. This represents approximately 35 to 53 percent of the annual recharge volume at Tujunga Spreading Grounds for the 2000-2001 storm season (1,685 acre-feet). (The long-term average spreading is 2,900 acre-feet/year, and the maximum capacity is 58,000 acre-feet/year. See **Table 4.7-6**.) As described in **Section 4.7.3.2**, the use of Tujunga Spreading Grounds is currently limited, particularly in above-normal runoff years, due to the methane migration from the adjacent historical landfill (Sheldon/Arleta Landfill). A task force consisting of LACDPW, City of Los Angeles Bureau of Sanitation, LADWP, and the ULARA Watermaster's office is currently conducting a pilot study to continue limited spreading while operating a gas collection system (ULARA Watermaster, 2002). At this time, it cannot be determined whether the methane migration issue at the Tujunga Spreading Grounds will be resolved by the time the Strathern Pit component is implemented.

Mitigation Measure W-5 will be implemented to evaluate the feasibility of using the Tujunga Spreading Grounds for stormwater infiltration.

4.7.6.4 Impact by Alternative

Surface Water Quality Impacts. For soil erosion impacts from project construction, the theoretical worst-case alternative is defined as the alternative that would involve the maximum amount of construction (i.e., all proposed project components). Among the four County-defined alternatives, Alternative 2 has a higher potential for soil erosion since it would result in approximately 60 acres of additional surface disturbance during construction compared to Alternatives 1, 3, or 4. In addition, construction impacts on Tujunga Wash are associated with Alternative 2 only, since Sheldon Pit is the only project component that involves modification of Tujunga Wash.

With respect to operational impacts on surface water quality, Alternative 2 is expected to have the most beneficial impacts since it would divert the largest amount of stormwater from discharge into the Los Angeles River.

Operational Impacts on Groundwater Quality.

All four County-defined alternatives would result in approximately 2,000 acre-feet of stormwater infiltration in a year with average rainfall. Therefore, the four alternatives have similar potential for groundwater quality impacts associated with stormwater infiltration. (Alternative 3 would have approximately 1,400 acre-feet of onsite infiltration plus approximately 600 acre-feet of stormwater discharged to the exposed groundwater at Sheldon Pit after the stormwater is treated and used for gravel washing at the Vulcan Gravel Processing Plant. Alternative 2 includes infiltration of additional 6,000 acre-feet of water diverted from Tujunga Wash into Sheldon Pit. Since the flows in Tujunga Wash are mountain runoff and are therefore high quality water, this additional 6,000 acre-feet would not contribute to the potential adverse groundwater quality impacts of stormwater infiltration.)

With respect to potential soil contamination, the theoretical worst-case alternative is the alternative that would implement all proposed project components. Although the site-specific potential for soil contamination cannot be quantified at this time, the four County-defined alternatives are expected to be similar in terms of potential groundwater quality impacts related to soil contamination.

Alternative 2 has the highest potential for adverse impacts on groundwater hydrology (potential inundation of landfill material and impact on existing contaminant plumes) since it involves the greatest amount of infiltration by far. However, as described in **Section 4.7.6.3.3**, groundwater modeling conducted for the proposed project predicts that the project, even with the infiltration amounts proposed under Alternative 2, would not substantially alter the groundwater hydrology, and would not result in a significant impact.

The potential for adverse impact on exposed groundwater at Sheldon Pit is greatest for Alternative 3 since it involves the use of stormwater collected at Strathern Pit for gravel washing at Vulcan Gravel Processing Plant. Alternative 3 would replace approximately 17 percent of the plant's existing annual water use with treated stormwater, compared with 1.3 percent for Alternatives 1, 2, and 4.

Potential impacts related to the methane migration problem at the Tujunga Spreading Grounds apply to Alternatives 1, 2, and 4 only, since under Alternative 3, water collected at Strathern Pit will not be infiltrated at the Tujunga Spreading Grounds.

4.7.7 Mitigation Measures

Construction Impacts on Soil Erosion

W-1 The construction contractor will develop and implement a Storm Water Pollution Prevention Plan (SWPPP) for all project components (except Onsite BMPs and Tree Planting and Mulching) that involve constructing, clearing, grading or excavation on areas over 1 acre in size. The following are possible measures to be incorporated into site-specific SWPPPs. Additional sample measures and guidelines for developing SWPPPs are available in California Stormwater Quality Association's *Stormwater Best Management Practice Handbook – Construction* (CASQA, 2003). Measures to reduce fugitive dust generated during construction (see **Section 4.1.4 – Air Quality**) will also minimize the potential for soil erosion.

- Install perimeter silt fences or hay bales.
- Stabilize soils through hydroseeding and use of soil stabilizers.
- Install temporary sedimentation basins.
- Conduct earth moving activities during the dry season (April through October), as feasible.
- Designate storage areas for construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) to keep these materials out of the rain and minimize contact with stormwater.
- Conduct regular inspections to ensure compliance with the SWPPP.

General Groundwater Quality Impacts from Stormwater Infiltration and Impacts on Exposed Groundwater at Sheldon Pit

W-2 LACDPW will prepare an annual vadose zone, surface water, and groundwater quality monitoring report to present the results of the Phase 1 projects to the

Stakeholders. LACDPW will work with the Stakeholders to evaluate the effectiveness of the stormwater treatment devices and determine the necessity of additional stormwater treatment prior to subsequent infiltration or for use in wetlands designed to provide wildlife habitat. Where indicated based on water quality concerns, additional stormwater treatment will be installed or infiltration will be discontinued at the relevant site. For sites with constructed wetlands that support wildlife habitat, modifications necessary based on water quality concerns will be designed to retain wetland vegetation or manage the wetlands in accordance with wildlife agency agreements or consultations.

Impacts from Potential Soil Contamination at Infiltration Sites

H-1 See **Section 4.5.4** (Hazards and Hazardous Materials).

Impacts related to Groundwater Hydrology

W-3 Prior to starting operation of Sheldon Pit, LACDPW will coordinate with Waste Management Inc., the Regional Board, and ULARA Watermaster to develop a contingency plan that will be implemented in the event the groundwater levels at existing monitoring wells around Bradley Landfill reach the "alert level" of 745 feet msl. The contingency plan will outline actions to be taken if the "alert level" is reached (e.g., reduce or stop stormwater infiltration for a period of time until groundwater levels begin to fall).

W-4 If the site-specific Phase I ESA (see Mitigation Measure H-1) indicates that an active or closed landfill (either municipal solid waste or inert construction waste) is located within 500 feet from the project site boundary, a site-specific geotechnical study will be conducted to: 1) characterize the extent and composition of landfill materials; 2) determine whether the landfill materials are releasing methane; 3) and estimate the potential mounding effect from the proposed stormwater infiltration. The results of the geotechnical study will be incorporated into the project design to minimize the potential for project infiltration to result in interaction between infiltrated stormwater and landfill materials or to impact landfill gas releases, if any. Potential design modifications include siting the infiltration facilities away from the landfill and/or partially lining the facilities to direct infiltration away from the landfill. For sites with stormwater infiltration within 500 feet of an active or closed landfill, a groundwater monitoring program will then be developed and implemented to ensure that infiltration does not result in interaction between infiltrated stormwater and landfill materials or impact landfill gas releases. Infiltration would cease at any site where groundwater levels rose to within 10 feet of landfill materials.

Impact related to Infiltration at Tujunga Spreading Grounds

W-5 As part of detailed design of the Strathern Pit component (Alternatives 1, 2, and 4), LACDPW will coordinate with Los Angeles Bureau of Sanitation, LADWP, and ULARA Watermaster's office to evaluate the feasibility of using the Tujunga Spreading Grounds for stormwater infiltration. The evaluation will determine the amount of stormwater that can be infiltrated by the proposed project without adverse effects on landfill methane migration.

4.7.8 Future Analyses

The following future analyses related to water quality issues will be conducted:

- LACDPW will prepare an annual vadose zone and groundwater quality monitoring report to present the results of the Phase 1 projects to the Stakeholders. LACDPW will work with the Stakeholders to evaluate the effectiveness of the stormwater treatment devices and determine the necessity of additional stormwater treatment prior to subsequent infiltration. Where indicated, additional stormwater treatment will be installed or infiltration will be discontinued at the relevant site.
- During the detailed design phase of each project component (except Onsite BMPs, Tree Planting & Mulching, and Storm Drains), a Phase I Environmental Site Assessment (ESA) will be conducted to determine the site-specific potential for soil contamination. (See **Section 4.5.5**)
- As part of detailed design for the Sheldon Pit component, the U.S. Army Corps of Engineers, Regional Board, and California Department of Fish and Game will be consulted regarding the proposed modification of Tujunga Wash. All necessary federal and state approvals, including CWA Section 404 permit, CWA Section 401 water quality certification or waiver or Fish and Game Code Section 1601 Streambed Alteration Agreement, will be obtained prior to the implementation of construction activities (see **Section 4.2.3**). The conditions of the agency approvals would include measures to minimize the potential water quality impacts associated with the channel modification (e.g., conduct construction during the dry season).
- As part of detailed design for the Strathern Pit component (Alternatives 1, 2, and 4), LACDPW will coordinate with LADWP and evaluate the feasibility of using the Tujunga Spreading Grounds for stormwater infiltration. The evaluation would determine the amount of stormwater that can be infiltrated by the proposed project without adverse effects on the methane migration problem.

4.8 NOISE

Noise is usually defined as sound that is undesirable because it interferes with speech communication and hearing, is intense enough to damage hearing, or is otherwise annoying. Sound levels are measured in decibels (dB), a unit of power expressed on a logarithmic scale. The most common measure for environmental sound is the "A" weighted sound level (dBA), which indicates that the decibel value has been adjusted to properly weigh the sound frequencies within the range of the human ear.

Two of the most commonly used noise scales designed to account for the known effects of noise on people are: Equivalent Noise Level (L_{eq}) and Community Noise Equivalent Level (CNEL). L_{eq} is the "energy" average noise level during the time period of the sample. L_{eq} can be measured for any time period, but is typically measured for 1 hour. CNEL is the predominant rating scale used in California for land use compatibility assessment. The CNEL scale represents a time weighted 24-hour average noise level based on dBA. Time weighted refers to the fact that noise that occurs during certain sensitive time periods is adjusted upwards. Noises occurring during the evening time period (7 p.m. to 10 p.m.) are counted as if they were 5 dBA louder, while nighttime (10 p.m. to 7 a.m.) noises are counted as if they were 10 dBA louder.

In addition to the absolute noise level, the increase in noise level over the existing noise environment is also an important consideration. General rules of thumb for real-life noise environments are that a change of over 5 dB is readily noticeable. Changes from 3 to 5 dB may be noticed by some individuals, possibly resulting in sporadic complaints. Changes of less than 3 dB are normally not noticeable.

4.8.1 Existing Setting

The project area is highly urbanized and includes industrial, commercial, and residential land uses. Land uses at the northern and northeastern end of the watershed are primarily open space and low-density residential, including Hansen Dam Golf Course, Stonehurst Park, Stonehurst Elementary School, and the surrounding residential neighborhood. The remaining area in the northern watershed (north of the intersection of Tuxford Street and San Fernando Road) is dominated by industrial uses. These include exhausted gravel pits used as landfills for inert construction debris (Cal Mat Pit) or gravel washwater disposal (Sheldon Pit), a municipal landfill (Bradley Landfill), a power generating facility (LADWP Valley Steam Plant), Vulcan Gravel Processing Plant, and various auto dismantling operations. Pacifica Hospital of the Valley is located on the western corner of San Fernando Road and Sheldon Street, across from Valley Steam Plant. The Hansen Spreading Grounds are located outside of the watershed and immediately northwest of the Valley Steam Plant.

The southern portion of the watershed, located south of the Tuxford-San Fernando intersection, is primarily developed with low to medium density residential uses. Some industrial uses, including an inert landfill (Strathern Pit), are located north of Strathern Street as well as along Burbank-Glendale-Pasadena Airport, which is adjacent to the watershed to the east. Public facilities located in the southern portion include Sun Valley Park, Sun Valley Middle School, and Roscoe Elementary School.

The existing land uses at individual project component sites and nearest sensitive receptors (as defined in the City of Los Angeles General Plan Noise Element) are shown in **Table 4.8-1.** **(**The distances to the nearest sensitive receptors are shown in **Table 4.8-6**.)

Table 4.8-1
Project Component Sites Existing Land Uses and Nearby Sensitive Receptors

Project Component	Existing Use	Nearest Sensitive Receptor
CalMat Pit	Gravel pit (inactive)	Residences
New Park on Wentworth	Vacant	Residences
Parking Lot on Sherman	Commercial buildings	Residences
Power Line Easement	LADWP power line right-of-way	Residences
Roscoe Elementary School	LAUSD school	Roscoe Elementary School and Residences
Sheldon Pit	Gravel pit (inactive); used for disposal of gravel washwater	Residences
Stonehurst Elementary School	LAUSD school	Stonehurst Elementary School and Residences
Stonehurst Park	Community park	Stonehurst Park and Residences
Storm Drains	Roadways	Varies by segment
Strathern Pit	Landfill for inert waste	Residences
Street Storage	Roadways	Varies by segment
Sun Valley Middle School	LAUSD school	Sun Valley Middle School and Residences
Tuxford Green	Vacant	Residences
Valley Steam Plant	LADWP power plant	Hospital
Vulcan Gravel Processing Plant	Gravel processing facility	Residences

Previous Noise Monitoring. As part of the environmental impact analysis for Project 9250, a storm drain project previously proposed within the watershed (see **Section 7**), onsite noise monitoring was conducted in 1994 at seven locations along the proposed alignment of the storm drain. Monitoring sites included: three locations on Vineland Avenue between Strathern Street and Sherman Way, one point on Clybourn Avenue between Van Owen Street and Victory Boulevard, two points on Cahuenga Boulevard between Victory Boulevard and Oxnard Street, and one point on Whitnall Highway between Oxnard Street and Burbank Boulevard. The alignment of the storm drains proposed under the Sun Valley Watershed Management Plan will be very similar to the alignment of Project 9250 storm drains. The L_{eq} values for these seven locations ranged from 64 and 72 dBA (LACDPW, 1995).

4.8.2 Regulatory Setting

Federal and state agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, which are not applicable to the proposed project. Stationary noise sources and construction noise are regulated by local agencies through implementation of General Plan policies and Noise Ordinance standards. The proposed project is located within the City of Los Angeles.

The City of Los Angeles General Plan Noise Element (Noise Element) presents “Guidelines for Noise Compatible Land Use” (**Table 4.8-2**). These guidelines establish desirable noise levels for siting various land uses. A proposed land use that would be exposed to noise levels that are considered Normally Acceptable indicates that the land use is compatible with the noise environment and no special noise insulation is required. If new development would be exposed to a Conditionally Acceptable noise level, a noise analysis is typically required to determine noise mitigation to reduce noise levels to a compatible level. A noise analysis is also required for new development exposed to a Normally Unacceptable noise level. In general, development is discouraged for land uses in areas with this designation. Proposed development exposed to Clearly Unacceptable noise levels should generally not be undertaken.

The Noise Element defines noise sensitive land uses as "single-family and multi-unit dwellings, long-term care facilities (including convalescent and retirement facilities), dormitories, motels, hotels, transient lodgings and other residential uses; houses of worship; hospitals; libraries; schools; auditoriums; concert halls; outdoor theaters; nature and wildlife preserves, and parks" (Los Angeles City, 1999b). The proposed Watershed Management Plan includes the siting of new parks in the Sun Valley area of the City of Los Angeles.

Noise generated by construction activities is regulated by the Los Angeles Municipal Code (LAMC) as summarized in **Table 4.8-3**.

In addition to the City of Los Angeles standards, the Los Angeles Unified School District (LAUSD) has established maximum allowable noise levels for protection of students and staff from noise impacts. LAUSD's exterior noise standard is 67 dBA L_{eq}, and the interior noise standard is 52 dBA L_{eq}. A noise level increase of 3 dBA or more over ambient noise levels is considered significant for existing schools (LAUSD, pers. comm., 2002).

Table 4.8-2
City of Los Angeles Guidelines for Noise Compatible Land Use

Land Use Category	Day-Night Average Exterior Sound Level (CNEL dB)						
	50	55	60	65	70	75	80
Residential Single Family, Duplex, Mobile Home	A	C	C	C	N	U	U
Residential Multi-Family	A	A	C	C	N	U	U
Transient Lodging, Motel, Hotel	A	A	C	C	N	U	U
School, Library, Church, Hospital, Nursing Home	A	A	C	C	N	N	U
Auditorium, Concert Hall, Amphitheater	C	C	C	C/N	U	U	U
Sports Arena, Outdoor Spectator Sports	C	C	C	C	C/U	U	U
Playground, Neighborhood Park*	A	A	A	A/N	N	N/U	U
Golf Course, Riding Stable, Water Recreation, Cemetery	A	A	A	A	N	A/N	U
Office Building, Business, Commercial, Professional	A	A	A	A/C	C	C/N	N
Agriculture, Industrial, Manufacturing, Utilities	A	A	A	A	A/C	C/N	N

Source: City of Los Angeles, 1999

* Relevant to the Watershed Management Plan

A: Normally acceptable: Specified land use is satisfactory, based upon assumption that buildings involved are conventional construction, without any special noise insulation.

C: Conditionally acceptable: New construction or development only after a detailed analysis of noise mitigation is made and needed noise insulation features are included in project design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning normally will suffice.

N: Normally unacceptable: New construction or development generally should be discouraged. A detailed analysis of noise reduction requirements must be made and noise insulation features included in the design of a project.

C: Clearly unacceptable: New construction or development generally should not be undertaken.

4.8.3 Significance Criteria

Project impacts related to noise would be considered significant if the project:

- Exposed persons to noise levels in excess of standards established in the City of Los Angeles Noise Ordinance during project construction (**Table 4.8-3**)
- Exceeded LAUSD's standard for exterior noise levels (67 dBA) during project construction at school sites
- Resulted in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project

Table 4.8-3
City of Los Angeles Noise Ordinances

Los Angeles Municipal Code	Requirement
Chapter XI, Article 2, Section 112.05	• Prohibits use of powered equipment between the hours of 7:00 a.m. and 10:00 p.m. within 500 feet of a residential zone if the equipment generates noise levels that exceed 75 dBA at a distance of 50 feet from the source. • The above noise limitations do not apply where compliance is infeasible despite the use of mufflers, shields, sound barriers and/or other noise reduction devices or techniques.
Chapter IV, Article 1, Section 41.40	• Prohibits construction activities that generate substantial noise levels between 9:00 p.m. and 7:00 a.m. • Prohibits construction activities within 500 feet of residences between 6:00 p.m. and 8:00 a.m. on Saturdays or national holidays and at any time on Sundays. • Construction projects which constitute an emergency, are for public interest, or where undue hardship or unreasonable delay would result from the interruption can be exempted from the above provisions with written permission from the Board of Police Commissioners.
Chapter XI, Article 2, Section 114.03	• Prohibits loading or unloading of vehicles, operation of dollies, carts, forklifts, or other wheeled equipment which causes any impulsive sound, raucous or unnecessary noise within 200 feet of any residential building between the hours of 10:00 p.m. and 7:00 a.m.

4.8.4 Impacts

4.8.4.1 Construction Impacts

Construction noise represents a temporary impact on ambient noise levels. The dominant source of noise from most construction equipment is the engine, usually diesel, without sufficient muffling. In a few cases, such as impact pile driving or pavement breaking, noise generated by the process dominates (FTA, 1995). During project construction, the highest noise-generating activities at most project component sites are expected to be earth moving, including excavation, grading, and filling. Typical noise level during excavation at public works construction sites (e.g., roads, highways, sewers, and trenches) is 88 dBA with all pertinent equipment present at the site (Canter, 1977).

Construction equipment can operate intermittently or continuously. Construction activities are characterized by variations in the power expended by the equipment, with resulting variation in noise levels over time. To account for this variation, noise generated from equipment can be expressed in terms of L_{eq}, which takes into consideration the percentage of time during the workday that the equipment is operating at full power. Typical noise levels for various types of equipment in terms of L_{eq} are shown in **Table 4.8-4**.

In addition to having daily variations in activities, construction projects are carried out in several different phases, each with a different combination of equipment depending on the work being performed. The L_{eq} for each phase can be determined by combining the L_{eq} contributions from each piece of equipment used in that phase. For a general assessment of construction noise, it is sufficient to determine the noise levels generated from the two noisiest pieces of equipment used concurrently in each phase (FTA, 1995).

Table 4.8-4
Construction Equipment Noise Levels in terms of L_{eq}

Equipment	Typical Noise Level (dBA) at 50 feet from Source	Equipment	Typical Noise Level (dBA) at 50 feet from Source
Air Compressor	81	Pile Driver (Impact)	101
Backhoe	80	Pile Driver (Sonic)	96
Ballast Equalizer	82	Pneumatic Tool	85
Ballast Tamper	83	Pump	76
Compactor	82	Rail Saw	90
Concrete Mixer	85	Rock Drill	98
Concrete Pump	82	Roller	74
Concrete Vibrator	76	Saw	76
Crane, Derrick	88	Scarifier	83
Crane, Mobile	83	Scraper	89
Dozer	85	Shovel	82
Generator	81	Spike Driver	77
Grader	85	Tie Cutter	84
Impact Wrench	85	Tie Handler	80
Jack Hammer	88	Tie Inserter	85
Loader	85	Truck	88
Paver	89		

Source: FTA, 1995.

Since the various components of the proposed project are scheduled to be implemented over a period of approximately 10 years, detailed construction plans have not been developed. Based on the concept designs of the proposed facilities, MWH staff members experienced with construction management have estimated the types of construction equipment required for each project component. To assess a typical construction noise condition for each project component site, the two noisiest pieces of equipment that would be operating concurrently were selected based on the estimated noise levels shown in **Table 4.8-4**. Then, the cumulative noise level of the two pieces of equipment was estimated using **Table 4.8-5**. Since dB is expressed on a logarithmic scale, dB values cannot be summed directly (Canter, 1977). For example, two pieces of equipment each generating 80 dB do not add up to 160 dB, but would have a cumulative noise level of 83 dB.

The following equation was then used to estimate the attenuation of noise with distance from its source (i.e., the two pieces of construction equipment) to the nearest sensitive receptor.

$$SL_2 = SL_1 - 20 \log_{10} (r_2/r_1)$$

Where:
SL_1 = sound level at 50 feet, in dB
SL_2 = sound level at the boundary of the nearest noise sensitive receptor's property, in dB
r_1 = 50 feet
r_2 = distance to the boundary of the nearest noise sensitive receptor's property, in feet

(Source of Equation: Canter, 1977)

Table 4.8-5
Aid for Determining Cumulative Noise Levels

Difference Between Noise Levels, dBA	No. of dBA to be added to higher level
0	3.0
1	2.6
2	2.1
3	1.8
4	1.5
5	1.2
6	1.0
7	0.8
8	0.6
10	0.4
12	0.3
14	0.2
16	0.1

Source: Canter, 1977

Table 4.8-6 presents the estimated construction noise levels at the nearest sensitive receptor for each project component site.

Table 4.8-6
Estimated Un-Mitigated Construction Noise by Project Component

Project Component	Two Noisiest Pieces of Equipment Estimated to be in Use Concurrently		Distance to Nearest Sensitive Receptor, r_2 (feet)	Estimated Noise Level at Nearest Sensitive Receptor, SL_2 (dBA)
	Type of Equipment	Cumulative Noise Level at 50 feet from the Source, SL_1 (dBA)		
Cal Mat Pit	Trucks	91	170	**80**
New Park on Wentworth	Trucks	91	<50	**91**
Parking Lot on Sherman	Trucks	91	75	**87**
Power Line Easement	Trucks	91	<50	**91**
Roscoe Elementary School	Trucks	91	<50	**91**
Sheldon Pit	Scrapers	92	300	**76**
Stonehurst Elementary School	Trucks	91	<50	**91**
Stonehurst Park	Trucks	91	<50	**91**
Storm Drains	Pavers	92	<50*	**92**
Strathern Pit	Trucks	91	165	**81**
Street Storage	Pavers	92	<50*	**92**
Sun Valley Middle School	Pavers	92	<50	**92**
Tuxford Green	Trucks	91	2,390	57
Valley Steam Plant	Trucks	91	350	74
Vulcan Gravel Processing Plant	Trucks	91	1,500	61

* Distance to sensitive receptors would vary by segment.
Numbers shown in **bold** are noise levels greater than 75 dBA.

Table 4.8-6 indicates that, during project construction, noise levels at the sensitive receptors located near the project component sites would range between 57 dBA and 92 dBA, and in most cases would, at times, exceed the City of Los Angeles standard for construction noise (75 dBA, see **Table 4.8-3**).

The estimated noise levels shown in **Table 4.8-6** represent the worst-case scenario, since the equation does not take into account noise attenuation due to site topography (i.e., difference in elevation between the noise source and the receiver), presence of natural or man-made sound barriers, and ground conditions (hard vs. soft surfaces). At the project component sites involving gravel pits (Strathern Pit, Sheldon Pit, and Cal Mat Pit), construction equipment would operate at several tens of feet below street level. The walls of the gravel pits would have a barrier effect on noise generated within the pit, deflecting some of the noise away from the sensitive receptors located outside of the pit at street level. For example, assuming a vertical difference of 25 feet between the street level and the bottom of the gravel pit where construction equipment would be operating, the noise levels at the nearest sensitive receptors for Cal Mat Pit, Sheldon Pit, and Strathern Pit would be approximately 78, 73, and 78 dB, respectively. (The noise levels adjusted for elevation differences were calculated using the equations and factors presented in the FTA Guidance Manual (1995) for estimating noise attenuation when the receiver is at an elevated location compared to the noise source.) Therefore, taking into account site topography, construction of Sheldon Pit is expected to result in less than significant noise impacts.

However, many of the project component sites are located in close proximity to sensitive receptors. In several cases (Roscoe Elementary School, Stonehurst Elementary School, Sun Valley Middle School, and Stonehurst Park), the project component sites themselves are sensitive receptors. In addition to onsite construction activities at the three schools, construction of storm drains would occur on Cahuenga Boulevard, which is adjacent to the St. Patrick's School. The project would also result in construction vehicle traffic and an associated increase in noise levels along the streets in the project area. (Construction impact on traffic is discussed in **Section 4.11.4**.) While noisy, construction impacts related to storm drain installation are very temporary at any one location. These linear construction zones are expected to progress at an average rate of 200 to 500 feet per day. Under typical conditions, any particular location would be directly impacted by the construction activities for one to five days.

Construction noise impacts on sensitive receptors would be potentially significant for the following project components: New Park on Wentworth, Parking Lot on Sherman, Power Line Easement, Roscoe Elementary School, Sheldon Pit, Stonehurst Elementary School, Stonehurst Park, Storm Drains, Strathern Pit, Street Storage, Sun Valley Middle School. **Mitigation Measures N-1 and N-2** are proposed to reduce construction noise generated by all project components except Tree Planting & Mulching. **Mitigation Measures N-3 and N-4** are proposed to reduce construction noise generated by all project components except Onsite BMPs, Tree Planting & Mulching, and Storm Drains. After mitigation, impacts on noise are anticipated to be less than significant.

The voluntary community participation projects would involve installation of minor facilities (e.g., dry wells, cisterns, and infiltration devices for Onsite BMPs) and tree planting at participating industrial, commercial, or residential properties. Installation of Onsite BMPs would require one to two weeks at each site. Noise impacts of Onsite BMPs and Tree Planting would be less than significant. The Mulching project component does not involve construction; therefore, no construction noise impacts would occur.

4.8.4.2 Operational Impacts

Noise from operation of the proposed project will be generated by pumps. Based on the concept design of the various project components, the following project components are expected to involve operation of pumps:

- **Valley Steam Plant.** Two 35,000-gpm pumps would be required to transport stormwater from the retention basins to the onsite storage tanks. These pumps would be operated only during large storms when the inflow to the retention basins exceed their capacities. (All alternatives)
- **Vulcan Gravel Processing Plant.** One 10-hp pump would be required to transport stormwater from the retention basins to the onsite storage tank for later reuse. (All alternatives)
- **Strathern Pit.** One 150-hp pump would be required to transport the collected stormwater to either Tujunga Spreading Grounds (Alternative 1, 2, and 4) or Vulcan Gravel Processing Plant (Alternative 3). One 1-hp pump would be used to continuously circulate stormwater through the wetlands.
- **Sheldon Pit.** One 1-hp pump would be used to continuously circulate stormwater through the wetlands. (Alternative 2)
- **Sun Valley Middle School.** An underground sump pump would be used to transport water from the underground stormwater storage tank to the irrigation system. (All alternatives)
- **Tuxford Green, Roscoe Elementary School, and Stonehurst Elementary School.** Pumps would likely be required to transport the collected stormwater to the irrigation system. (Tuxford Green is included in all alternatives, and Roscoe and Stonehurst Elementary Schools are included in Alternative 1.)

Valley Steam Plant and Vulcan Gravel Processing Plant are not located in close proximity to residences or other sensitive receptors; therefore, any noise generated by operation of the proposed pumps would be less than significant. The proposed pumps at Strathern Pit and Sheldon Pit would be located within the proposed parks at the respective project component sites. These pumps would be enclosed with a pump building, and therefore would have less than significant noise impacts. The pumps at Sun Valley Middle School, Tuxford Green, Roscoe Elementary School, and Stonehurst Elementary School would be small in capacity, and is therefore anticipated to have less than significant noise impacts.

During project operation, noise will be generated by worker vehicles travelling to various project components for maintenance and inspection, which is expected to be several times a year for each project component. Operation of proposed parks (Sheldon Pit, Cal Mat Pit, Strathern Pit, Tuxford Green, and New Park on Wentworth) would result in generation of visitor traffic

(**Section 4.11.5**). Noise impacts of the increase in traffic associated with project operation are considered less than significant.

4.8.4.3 Impact of Siting New Parks

As shown in **Table 4.8-2**, the Noise Element of the City of Los Angeles General Plan considers areas with noise levels of 65 dB or less to be compatible for siting of new park facilities. The project proposes construction of parks at the following project components:

- Cal Mat Pit – This project component site is in a residential area adjacent to the existing Stonehurst Park, and is located greater than 1 mile from the Interstate 5 freeway.
- New Park on Wentworth – This project component site is in a residential area adjacent to the Hansen Dam Golf Course, and is located greater than 2 miles from the Interstate 210 and 5 freeways.
- Sheldon Pit – This project component site is in a residential area adjacent to the Hansen Dam Golf Course, and is located greater than 1.5 miles from the Interstate 5 freeway.
- Strathern Pit – This project component site is in a mixed land use area adjacent to Sun Valley Park, and is located greater than 0.5 mile from Interstate 5 freeway.

The proposed park facilities at Cal Mat Pit, New Park on Wentworth, and Sheldon Pit would be sited in quiet residential areas. The surrounding environment at Strathern Pit includes industrial uses to the north, and therefore likely has a higher ambient noise level under existing conditions. However, Strathern Pit is located adjacent to the existing Sun Valley Park. Therefore, all the parks proposed under the project would be compatible with the surrounding land uses and the associated noise environment.

4.8.4.4 Impact by Alternative

As described above, the primary noise impacts of the project are related to construction activities. Therefore, the theoretical worst-case alternative for noise is defined as the alternative that would involve the maximum amount of construction, i.e., all proposed project components.

Schools are the most notable sensitive receptors in the project area with respect to noise. Alternative 1 and the theoretical worst-case alternative would have the greatest construction noise impact on schools because they would include all three project components involving school sites. Alternatives 2, 3, and 4 would involve only one project component that is a school site (Sun Valley Middle School), and would therefore have less construction noise impact on schools.

Operational noise impacts of the project are less than significant. All four County-defined alternatives would have similar levels of operational noise associated with pumps and maintenance of proposed stormwater management and other facilities.

4.8.5 Mitigation Measures

The following noise mitigation measures (N-1 and N-2) will be implemented during project construction (except Tree Planting & Mulching):

N-1 Construction activities will be limited to the hours allowed by the City of Los Angeles Noise Ordinance (i.e., between 7 a.m. and 9 p.m. on weekdays and between 8 a.m. and 6 p.m. on Saturdays and national holidays) unless written permission has been obtained from the City of Los Angeles Board of Police Commissioners per Section 41.40 of the Los Angeles Municipal Code.

N-2 All mobile construction equipment will be equipped with properly operating mufflers or other noise reduction devices.

The following noise mitigation measures (N-3 and N-4) will be implemented during project construction (except Onsite BMPs, Tree Planting & Mulching, and Storm Drains):

N-3 For discrete project component sites, businesses and residences immediately adjacent to the construction site will be notified prior to the start of construction, e.g., via flyers. A telephone number for noise complaints will be included in this notification.

N-4 Prior to the start of construction of the project components, the construction contractor will develop a site-specific noise mitigation plan based on an updated estimate of construction equipment and schedule for each project component. The objective of the mitigation plans will be to reduce noise levels to 75 dBA at the nearest residence and 67 dBA at school sites during project construction. The mitigation plans will identify potential mitigation measures, including installation of sound walls, sound curtains, and other temporary sound barriers; selection of quieter construction procedures and/or equipment; and noise monitoring to verify adherence to the identified mitigation measures. Additional mitigation measures for construction at school sites (i.e., Roscoe Elementary School, Stonehurst Elementary School, and Sun Valley Middle School) will include the following: scheduling the noisier phases of construction on Saturdays, school vacation periods, and/or after regular class hours but before 9 p.m, as feasible; and maintaining ongoing communications with the schools' administrators to address any construction noise-related issues. Coordination with St. Patrick's School will also be conducted prior to the installation of storm drains near this location.

4.8.6 Future Analyses

None required.

4.9 PUBLIC SERVICES

Public services discussed in this document are fire, police, and schools.

4.9.1 Existing Setting

4.9.1.1 Fire

The City of Los Angeles Fire Department provides fire protection and emergency medical service within the project area. The project area is served by three fire stations, as shown in **Table 4.9-1**.

Table 4.9-1
Fire Stations Serving the Project Area

Fire Station	Address	Type	Number of Firefighters per Shift
77	8943 Glenoaks Blvd., Sun Valley	Paramedic Engine Company	4
89	7063 Laurel Canyon Blvd., North Hollywood	Truck and Engine Company with a Paramedic Ambulance	12
60	5320 Tujunga Ave., North Hollywood	Truck and Engine Company with a Paramedic and Emergency Medical Technician Ambulance	16

Source: LACDPW, 1995.

4.9.1.2 Police

The City of Los Angeles Police Department provides police protection service within the project area. Foothill Community Police Station (12760 Osborne St., Pacoima) serves the portion of the project area north of Interstate 5. The North Hollywood Community Police Station (11640 Burbank Blvd., North Hollywood) serves the area south of Interstate 5 (LAPD, 2003).

4.9.1.3 Schools

Public and private schools located within or in the vicinity of the project area are shown in **Table 4.9-2**.

Table 4.9-2
Schools in the Project Area

Name	Address	School System	Relationship to Project
Arminta Elementary School	11530 Strathern St., North Hollywood	LAUSD	--
Byrd Middle School	9171 Telfair Ave., Sun Valley	LAUSD	--
Camellia Elementary School	7451 Camellia Ave., North Hollywood	LAUSD	--
Fair Elementary School	6501 Fair Ave., North Hollywood	LAUSD	--

Table 4.9-2 (Continued)
Schools in the Project Area

Name	Address	School System	Relationship to Project
Francis Polytechnic High School	12431 Roscoe Blvd., Sun Valley	LAUSD	adjacent to Tujunga Spreading Grounds
Oxnard Elementary School	10912 Oxnard St., North Hollywood	LAUSD	--
Roscoe Elementary School	10765 Strathern St., Sun Valley	LAUSD	project component (Alternative 1)
St. Patrick's School	10626 Erwin St., North Hollywood Phone: (818) 761-7363	Private	construction of storm drains on adjacent street (Cahuenga Blvd.)
Stonehurst Elementary School	9851 Stonehurst Ave., Sun Valley	LAUSD	project component (Alternative 1)
Sun Valley Middle School	7330 Bakman Ave., Sun Valley	LAUSD	project component (Alternative 1)

4.9.1.4 Road Maintenance

If construction vehicle travel associated with the project resulted in substantial damage to local roadways or other features within the public right-of-way, City of Los Angeles may require the contractor to repair the damage.

4.9.2 Significance Criteria

Project impacts related to public services would be considered significant if the project:

- Required additional fire protection or law enforcement staff and/or equipment to maintain an acceptable level of service
- Substantially increased emergency service response times by fire and law enforcement staff
- Required substantial changes to the daily schedule or calendar of the school, a major reorganization of students or classrooms, or other temporary or permanent disturbance to the school's activities
- Created unsafe conditions for school staff and/or students
- Created overcrowded conditions at schools

4.9.3 Impacts

4.9.3.1 Fire and Police

Construction Impacts. The majority of the project components involve construction of storm drains, catch basins, and other structures within street rights-of-way (see **Table 4.9-3**). During construction of these structures, temporary road or lane closures may be required. Road or lane closures may require police and fire emergency vehicles to use less direct routes in responding to emergency calls in the project area, resulting in increased response times. In addition, project construction may temporarily affect fire vehicle access to streets, fire hydrants or structures adjacent to the affected roadways. Incorporation of mitigation measures identified below would minimize these potential impacts to less-than-significant levels.

Operational Impacts on Fire Services. The project does not involve construction of housing or other structures that would result in a substantial increase in the demand for fire protection or emergency medical services. Buildings to be constructed for the project include park buildings, if any, and pump enclosures. The project would not substantially increase fire hazards in the area. Therefore, the project is expected to be adequately served by existing resources of LAFD, and would not require additional fire protection staff and/or equipment to maintain an acceptable level of service. No impacts would occur.

Operational Impacts on Police Services. The project would not result in an increase in residences or businesses, and would not otherwise result in a substantial increase in the demand for security or calls for police services. Therefore, the project is expected to be adequately served by the existing resources of LAPD, and would not require additional law enforcement staff and/or equipment to maintain an acceptable level of service. No impacts would occur.

Table 4.9-3
Project Components
with Potential Road or Lane Closures during Construction

Project Component	Potential Road or Lane Closures during Construction
Cal Mat Pit	Lateral storm drains and catch basins
New Park on Wentworth	Lateral storm drains and catch basins
Onsite BMPs	None
Parking Lot on Sherman	Lateral storm drains and catch basins
Power Line Easement	Lateral storm drains and catch basins
Roscoe Elementary School	Lateral storm drains and catch basins
Sheldon Pit and Tujunga Wash Transfer	Lateral storm drains and catch basins
Stonehurst Elementary School	Lateral storm drains and catch basins
Stonehurst Park	Lateral storm drains and catch basins
Storm Drains	Trunk and lateral storm drains
Strathern Pit	Lateral storm drains, catch basins, and stormwater reuse line
Street Storage	Underground storage tanks within street rights-of-way
Sun Valley Middle School	Lateral storm drains and catch basins
Tree Planting and Mulching	None
Tuxford Green	Lateral storm drains and catch basins
Valley Steam Plant	Lateral storm drains and catch basins
Vulcan Gravel Processing Plant	Lateral storm drains and catch basins

4.9.3.2 Schools

Construction Impacts on Project Component Schools. Implementation of the Watershed Management Plan involves construction of stormwater management facilities at Sun Valley Middle School (all alternatives), Stonehurst Elementary School (Alternative 1), and Roscoe Elementary School (Alternative 1). Construction would take place on open areas at these schools, including sports fields and playgrounds, and would involve excavation, grading, installation of underground stormwater management facilities, and tree planting. Once construction is complete, the affected area would be sodded, landscaped, or paved as necessary to restore the original surface. No new buildings or modifications to existing buildings are proposed. In addition to onsite construction activities at the three schools, construction of storm drains would occur on Cahuenga Boulevard, which is adjacent to the St. Patrick's School.

Construction activities on Sun Valley Middle School, Stonehurst Elementary School, and Roscoe Elementary School and adjacent to St. Patrick's School may have temporary impacts on access to the schools and on student safety. Incorporation of mitigation measures identified below would minimize these potential impacts to less-than-significant levels.

Construction-related noise impacts on students and faculty at the relevant schools are discussed in **Section 4.8**.

Construction Impacts on School Commuting Routes. The majority of the project components involve construction of storm drains, catch basins, and other structures within roadways (see **Table 4.9-3**). During construction of these structures, temporary road or lane closures may be required, which may cause students to take less direct routes when commuting to school. Construction vehicles may also cause traffic delays within the project area and affect the on-time performance of school buses. Incorporation of mitigation measures identified below would minimize these potential impacts to less-than-significant levels.

Operational Impacts on Schools. The project does not involve construction of housing or other structures that would result in an increase in population. Furthermore, the proposed modifications to the school facilities would not have any permanent impact on the existing use or capacity of those facilities. Therefore, the proposed project would not have any impact on school capacity, and would not cause or contribute to overcrowding of schools in the project area. No impacts would occur regarding school population.

From an education perspective, installation of environmentally beneficial stormwater management systems on school properties is considered beneficial for students and faculty.

4.9.3.3 Road Maintenance

Project construction will be phased over 10 years, and would occur at various locations throughout the watershed. Therefore, no substantial damage to local roadways or other features within the public right-of-way is anticipated to occur from construction vehicle travel. If deemed necessary by the City of Los Angeles, the contractor will perform post-construction road maintenance. This is a less than significant impact.

4.9.3.4 Impact by Alternative

As described above, adverse project-related impacts on public services are related to construction activities. Therefore, the theoretical worst-case alternative for public services is defined as the alternative that would involve the maximum amount of construction, i.e. all proposed project components.

Construction Impact on Fire and Police Services Response Times and School Commuting Routes. Under all project alternatives, construction-related impacts on public services due to possible road/lane closures would be potentially significant without mitigation. The theoretical worst-case alternative would have the greatest construction impact on police and fire services since it would require the most extensive road/lane closures. Among the four County-defined alternatives, Alternative 3 would have more construction impacts because it involves the most extensive Street Storage project component (i.e., the length of roadways affected would be three to twelve times greater than the other alternatives) and would therefore require more substantial road/lane closures. Alternatives 1, 2, and 4 would involve similar and less extensive road/lane closures.

Construction Impact on Schools (Access and Student Safety). Under all project alternatives, construction impacts on school access and on student safety would be potentially significant without mitigation since one or more school sites would be affected directly. Alternative 1 and the theoretical worst-case alternative would have the greatest construction impact on schools because they would include all three project components involving school sites. Alternatives 2, 3, and 4 would involve only one project component that is a school site (Sun Valley Middle School), and would therefore have less construction impact on student access and safety.

Operational Impacts. Under all project alternatives, including the theoretical worst case, operational impacts on public services would be negligible. Buildings to be constructed for the project are limited to park buildings, if any, and pump enclosures, which would not result in a substantial increase in the demand for fire protection or emergency medical services. From an education perspective, installation of environmentally beneficial stormwater management systems on school properties is considered beneficial for students and faculty. Alternative 1 includes all three of the project components involving schools, and would therefore have the most beneficial impact from the education perspective.

4.9.4 Mitigation Measures

Fire and Police. The following mitigation measures will be employed to minimize construction impacts on police and fire services:

P-1 Prior to the start of construction, the fire stations serving the project area will be consulted to review phasing, road/lane closure, and detour plans and to determine fire and emergency medical response requirements.

P-2 The project will comply with all state and local codes and ordinances, and the guidelines found in the Fire Protection and Fire Prevention Plan, and Safety Plan located in the City of Los Angeles General Plan (C.P.C. 19708)

P-3 Prior to the start of construction, the North Hollywood Community Police Station and/or Foothill Community Police Station will be informed, as appropriate, of project-related lane and/or road closures and detour plans.

P-4 Investigate and implement traffic control measures capable of reducing the temporary adverse effects to police and emergency vehicle responses during project construction. Such measures may include the use of flagmen and posting “No Parking” signs along the affected area.

Project Component Schools. During construction, the following mitigation measures will be employed to minimize impacts on the three project component schools (i.e., Sun Valley Middle School, Stonehurst Elementary School, and Roscoe Elementary School) and St. Patrick’s School:

P-5 Ensure that school buses have access to Sun Valley Middle School, Stonehurst Elementary School, Roscoe Elementary School, and St. Patrick’s School during construction.

P-6 Ensure that safe and convenient pedestrian routes to Stonehurst, Roscoe, Sun Valley, and St. Patrick’s Schools are maintained.

P-7 Maintain ongoing communication with the administrators of the schools and provide sufficient notice to forewarn children and parents when existing pedestrian and vehicular routes to school will be affected.

P-8 Install appropriate traffic controls (e.g., signs and signals) as needed to ensure pedestrian and vehicular safety.

P-9 As feasible, haul routes will not be routed past the schools except when school is not in session.

P-10 Construction or worker vehicles will not be parked or staged on streets adjacent to the schools.

P-11 All construction areas on or adjacent to schools, including trench areas, operating equipment areas and equipment staging and stockpile areas, will be secured through fencing or other barriers to prevent trespassing and reduce hazards to children and other pedestrians.

School Commuting Routes. The following mitigation measure will be employed to minimize construction impacts on school commuting routes:

P-12 The Project Manager or designee will notify the LAUSD Transportation Branch and the St. Patrick’s School of the expected start and ending dates for various portions of the project that may affect traffic through the areas and any potential impact on existing school bus routes.

4.9.5 Future Analyses

Minimally, traffic control plans will be prepared for all project components involving construction within existing street rights-of-way. The traffic control plans would address issues relating to access for fire and police services.

4.10 RECREATION

4.10.1 Existing Setting

The project area encompasses two Community Plan areas in the City of Los Angeles. The majority of the project area is located within the Sun Valley-La Tuna Canyon (Sun Valley) Community Plan area, and a small portion in the southern end is located within the North Hollywood Community Plan area. The City of Los Angeles Recreation and Parks Department manages public parks and recreation areas in the Sun Valley watershed.

The City of Los Angeles General Plan establishes the city's objectives for park-to-population ratios. The City's objective is to have 6 acres of regional parkland and 4 acres of community and neighborhood parkland for every 1,000 residents (City of Los Angeles, 1999a). Based on year 2000 census data, the Sun Valley Community Plan area has approximately 85,000 residents. According to the City's park-to-population ratio objectives, the Sun Valley Community Plan area should have 340 acres of community and neighborhood park land. Currently, the Sun Valley Community Plan area has 91 acres of community and neighborhood parkland (City of Los Angeles, 1999a), which is equivalent to 27 percent attainment of the objective.

One community park (Sun Valley Park) and one neighborhood park (Stonehurst Park) are located within the Sun Valley Watershed. Sun Valley Park is 17 acres in area, and includes a recreation center building, a swimming pool, baseball fields, tennis courts, and open lawn and wooded areas. Stonehurst Park is 13 acres in area, and includes a playground, baseball and soccer fields, basketball courts, picnic and barbecue area, a recreation center building, and open lawn areas. In addition, Hansen Dam Golf Course, which is owned and operated by the City of Los Angeles, is located at the northern end of the watershed. Various equestrian trails in the northeastern portion of the watershed connect to other regional parks and recreational areas, such as the Hansen Dam Park and Angeles National Forest to the north, Verdugo Mountains to the east, and Griffith Park to the south.

4.10.2 Significance Criteria

Project impacts related to recreation would be considered significant if the project:

- Increases the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated

The proposed project includes construction of recreational facilities. The potential environmental effects that may result from the construction and operation of these facilities are discussed throughout **Section 4** of this Program EIR by environmental topic.

4.10.3 Impacts

4.10.3.1 Construction Impacts

At the following project component sites, construction of proposed facilities would have temporary effects on the availability of existing onsite recreational facilities:

- **Stonehurst Park.** Approximately 2.6 acres of the grass field area at the 13-acre park would be unavailable during construction. The estimated construction time for this project component is one month.
- **Roscoe Elementary School.** Approximately 1.5 acres of the school's open areas (2.5 acres) would be unavailable during construction. The estimated construction time for this project component is two months.
- **Stonehurst Elementary School.** Approximately 1.8 acres of the school's open areas (3 acres) would be unavailable during construction. The estimated construction time for this project component is two months.
- **Sun Valley Middle School.** Approximately 6 acres (including the grass playing field, basketball/volleyball courts, and Quad) of the 17-acre school site would be unavailable during construction. The estimated construction time for this project component is five months.

The areas affected during specific stages of construction would be smaller than indicated above due to phasing of construction activities. Disturbance from construction at these project sites may result in temporary increases in the use of other existing recreational facilities in the area. However, any increase in usage at other nearby recreational facilities would be short-term and minimal, and is not expected to cause or accelerate a substantial physical deterioration of those facilities. Construction-related impacts on recreation would be less than significant.

4.10.3.2 Operational Impacts

The proposed Watershed Management Plan includes various project components that would provide new recreational facilities and open space accessible to the residents in the project area. The approximate acreage of park land and open space proposed in each project component is shown in **Table 4.10-1** below by alternative. Locations of these project components are shown in **Figure 3-2**.

Among the four alternatives, Alternative 2 would result in the largest addition of parks and open space due to the inclusion of the Sheldon Pit component. However, all alternatives would contribute at least 50 acres of additional park land and open space to the project area. Therefore, the long-term impact of the project on recreational resources is beneficial.

Table 4.10-1
Approximate Acreage of Parks and Open Spaces Proposed to be Created
(acres)

Plan Component with Park or Open Space	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Tuxford Green	1	1	1	1
Strathern Pit	18	18	18	18
Power Line Easement	29	13	23	21
Sheldon Pit	---	52	---	---
New Park on Wentworth	3	---	---	---
Cal Mat Pit	---	---	30	30
Total	**51**	**84**	**72**	**70**

4.10.3.3 Impact by Alternative

As described above, the project's adverse impact on recreation is related to construction activities. Therefore, the theoretical worst-case alternative for recreation is defined as the alternative that would involve the maximum amount of construction, i.e. all proposed project components.

Alternative 1 and the worst-case alternative are expected to result in the greatest construction impact because they would include all four of the project components that would result in temporary disturbance of existing recreational facilities (see **Section 4.10.3.1** above). In contrast, Alternatives 2, 3, and 4 would result in a smaller effect, since Sun Valley Middle School is the only relevant component involved in these alternatives. However, under all project alternatives, construction impacts on recreation would be short-term and less than significant.

4.10.4 Mitigation Measures

None required.

4.10.5 Future Analyses

During detailed design, the timing and duration of temporary closures of recreational facilities at Stonehurst Park, Roscoe Elementary School, Stonehurst Elementary School, and Sun Valley Middle School will be updated.

4.11 TRAFFIC AND TRANSPORTATION

The following sections summarize the traffic/transportation analysis that evaluated the potential impacts of the proposed Sun Valley Watershed Management Plan. First, the analysis methodology and the existing conditions are presented. This is followed by description of the significance criteria, a presentation of the anticipated project impacts, and a set of mitigation measures.

4.11.1 Traffic Analysis Methodology

The general objective of the traffic analysis was to evaluate the impacts of the proposed watershed management facilities on the streets and roadways in the vicinity of each project site. The traffic analysis addresses the short-term impacts associated with the construction of the proposed retention basins, pipelines, infiltration systems, and other facilities, as well as the long-range impacts associated with the proposed complementary uses at each project site (where applicable); e.g., the park development proposed at some of the locations.

Three primary categories of traffic studies were prepared for the Watershed Management Plan. The first category is an assessment of the impacts of construction traffic on the roadways that provide access to each project site. During construction, a number of vehicles would be traveling to and from each project site, including trucks delivering materials to the site, trucks transporting dredge and/or other waste material away from the site, and construction workers' vehicles commuting to and from the site. The traffic volumes associated with these construction activities were estimated for each watershed management site and the traffic impacts on the surrounding roadway network were evaluated.

The second category for the traffic analysis is an evaluation of the physical impacts of the pipeline construction activities that are proposed to occur within the rights-of-way of public streets. Included in this analysis was an evaluation of the impacts and required mitigation measures associated with lane closures, detours, driveway blockages, loss of parking, and disruptions to traffic, transit, and pedestrian movements in the construction area.

The third category of traffic analysis is a quantification of the impacts associated with the permanent activities that would be developed at several of the project sites, which includes proposed park developments and minor operational activities at the watershed management sites. The volumes of traffic that would be generated by these activities were estimated for each watershed management site and the associated impacts on the surrounding roadway network were evaluated.

4.11.2 Existing Conditions

The project area for the proposed Sun Valley Watershed Management Plan is the eastern end of the San Fernando Valley in the Sun Valley and North Hollywood communities of the City of Los Angeles. The study area is defined generally by Hansen Dam and the Tujunga Wash on the north, Burbank Boulevard on the south, Lankershim Boulevard and San Fernando Road on the west, and Clybourn Avenue, Sunland Boulevard, and Stonehurst Avenue on the east. The Burbank-Glendale-Pasadena Airport is located within the study area.

One of the initial tasks for the traffic analysis was to establish the existing baseline conditions on the streets in the vicinity of each project site as well as the regional access system (freeways). The study area streets and highways were inventoried with regard to such physical characteristics as number of lanes, on-street parking, driveways, sidewalks, and types of traffic control devices (stop signs and traffic signals). Traffic volume data were also collected for the roadways in the project area. This data collection effort included the streets that would be used as primary access routes to and from each project site and the streets that would potentially be disrupted by pipeline construction activities. The existing conditions on the study area street network are described in the paragraphs below. A discussion of the freeway network is presented first, followed by a discussion of the local street system in the vicinity of each watershed management site.

4.11.2.1 Freeway Network

The freeway network that provides regional access to the project area includes the Golden State Freeway (Interstate 5), the Hollywood Freeway (State Route 170), the Foothill Freeway (Interstate 205), the Ronald Reagan Freeway (State Route 118), and the Ventura Freeway (State Route 134/US Route 101) (see **Figure 3-1**). The existing number of lanes on these freeways, the average daily traffic volumes, and the peak hour traffic volumes are shown in **Table 4.11-1**.

Table 4.11-1
Existing Conditions on Freeway Network

Freeway/Segment	Number of Lanes	Average Daily Traffic Volume	Peak Hour Traffic Volume
Golden State Freeway (I-5)			
At Burbank Boulevard	8	190,000	14,000
At Osborne Street	12	270,000	20,000
Hollywood Freeway (SR 170)			
At Sherman Way	8	160,000	13,000
Foothill Freeway (I-210)			
At Sunland Boulevard	8	95,000	10,000
Ronald Reagan Freeway (SR 118)			
West of I-210	8	89,000	9,000
Ventura Freeway (SR 134)			
At Cahuenga Boulevard	8	219,000	17,000
Ventura Freeway (US 101)			
At Coldwater Canyon Avenue	10	291,000	20,000

Source: Caltrans and 2002 Los Angeles County Congestion Management Program, MTA.

4.11.2.2 Streets in Vicinity of Individual Project Sites

The existing conditions on the streets in the vicinity of each individual watershed management project site are described in the following sections.

Valley Steam Plant. The streets that provide access to the Valley Steam Plant site include Sheldon Street, Glenoaks Boulevard, and San Fernando Road. These three roadways abut the Valley Steam Plant site on the southeast, northeast, and southwest sides of the site, respectively, while the Tujunga Wash abuts the northwest side of the site. **Figure 4.11-1** depicts the layout of these streets and shows the existing number of travel lanes on each street segment and the location of the signalized intersections. Sheldon Street has an interchange with the Golden Street Freeway (I-5) and the Hollywood Freeway (SR 170). A Union Pacific/Metrolink railroad track runs adjacent to San Fernando Road along the southwest side of the Valley Steam Plant site.

Table 4.11-2 shows the existing daily and peak hour traffic volumes and the number of travel lanes at representative locations on the streets in the Valley Steam Plant vicinity. Also shown are the volume/capacity (V/C) ratios and levels of service (LOS) for the peak direction of travel on each street segment for the morning and afternoon peak hours. The V/C ratios are based on a capacity assumption of 800 vehicles per hour per lane (Los Angeles County Congestion Management Program, 2002).

Figure 4.11-1
Existing Street Network – Valley Steam Plant

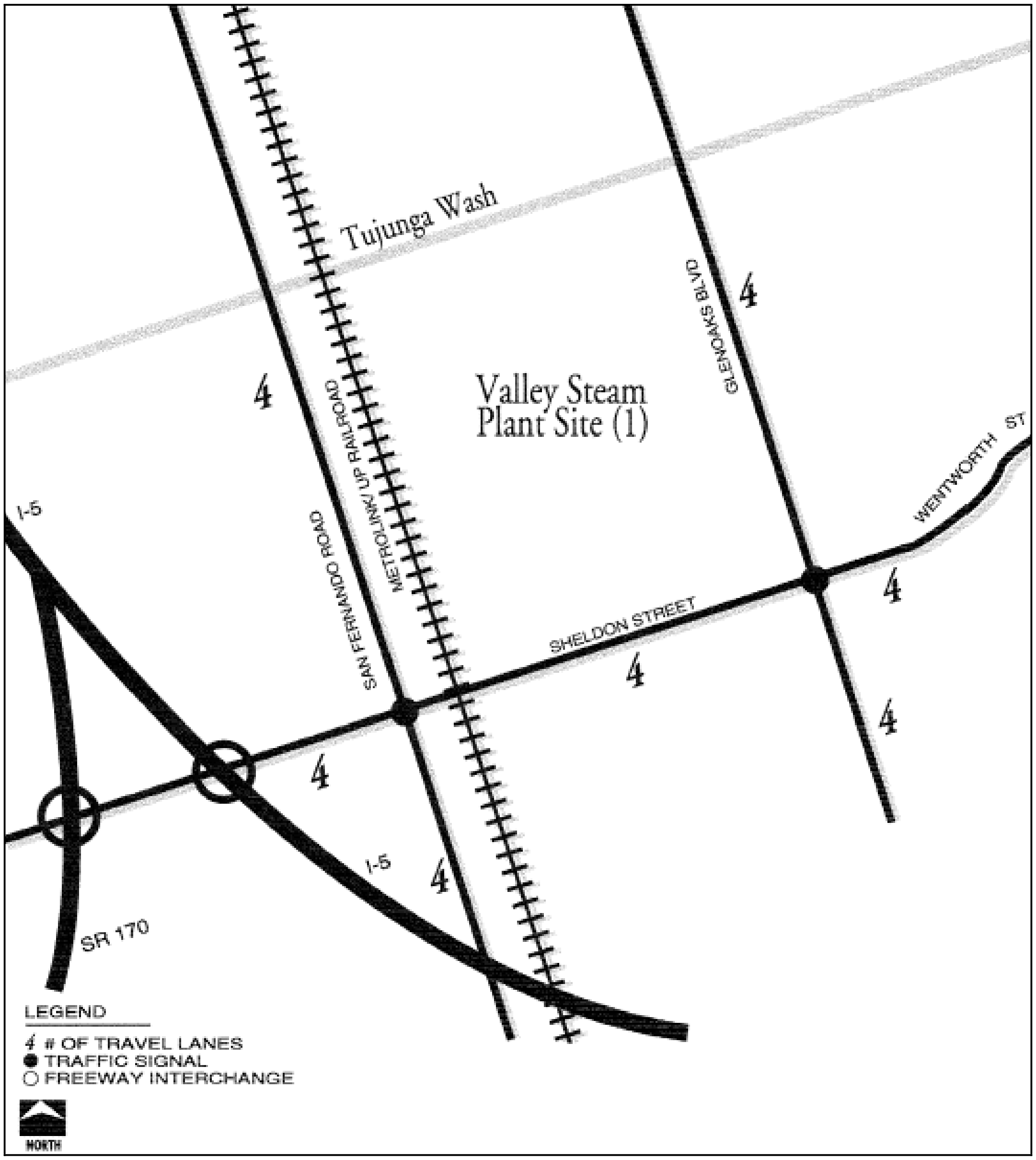


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Table 4.11-2
Existing Traffic Volumes & Levels of Service
Streets in Valley Steam Plant Vicinity

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Sheldon Street At Glenoaks Blvd	4	15,000	620e/920w	890e/400w	0.58-A	0.56-A
San Fernando Road At Sheldon Street	4	25,000	820n/1220s	1240n/930s	0.76-C	0.78-C
Glenoaks Boulevard At Sheldon Street	4	24,000	810n/1320s	1240n/1240s	0.82-D	0.78-C

Source: City of Los Angeles Department of Transportation & Field Reconnaissance, 2002.

Vulcan Gravel Processing Plant. The streets that provide access to the Vulcan Gravel Processing Plant site include Tuxford Street, Bradley Avenue, San Fernando Road, and Glenoaks Boulevard. Tuxford Street, Bradley Avenue, and San Fernando Road abut the Vulcan Gravel Processing Plant site on the southeast, northeast, and southwest sides of the site, respectively. **Figure 4.11-2** depicts the layout of these streets and shows the existing number of travel lanes on each street segment and the location of the signalized intersections. Tuxford Street has an interchange with the Golden Street Freeway (I-5). A Union Pacific/Metrolink railroad track runs adjacent to San Fernando Road along the southwest side of the Vulcan Gravel Processing Plant site.

Table 4.11-3 shows the existing daily and peak hour traffic volumes and the number of travel lanes at representative locations on the streets in the Vulcan Gravel Processing Plant vicinity. Also shown are the volume/capacity (V/C) ratios and levels of service (LOS) for the peak direction of travel on each street segment for the morning and afternoon peak hours.

Figure 4.11-2
Existing Street Network – Vulcan Gravel Processing Plant & Tuxford Green

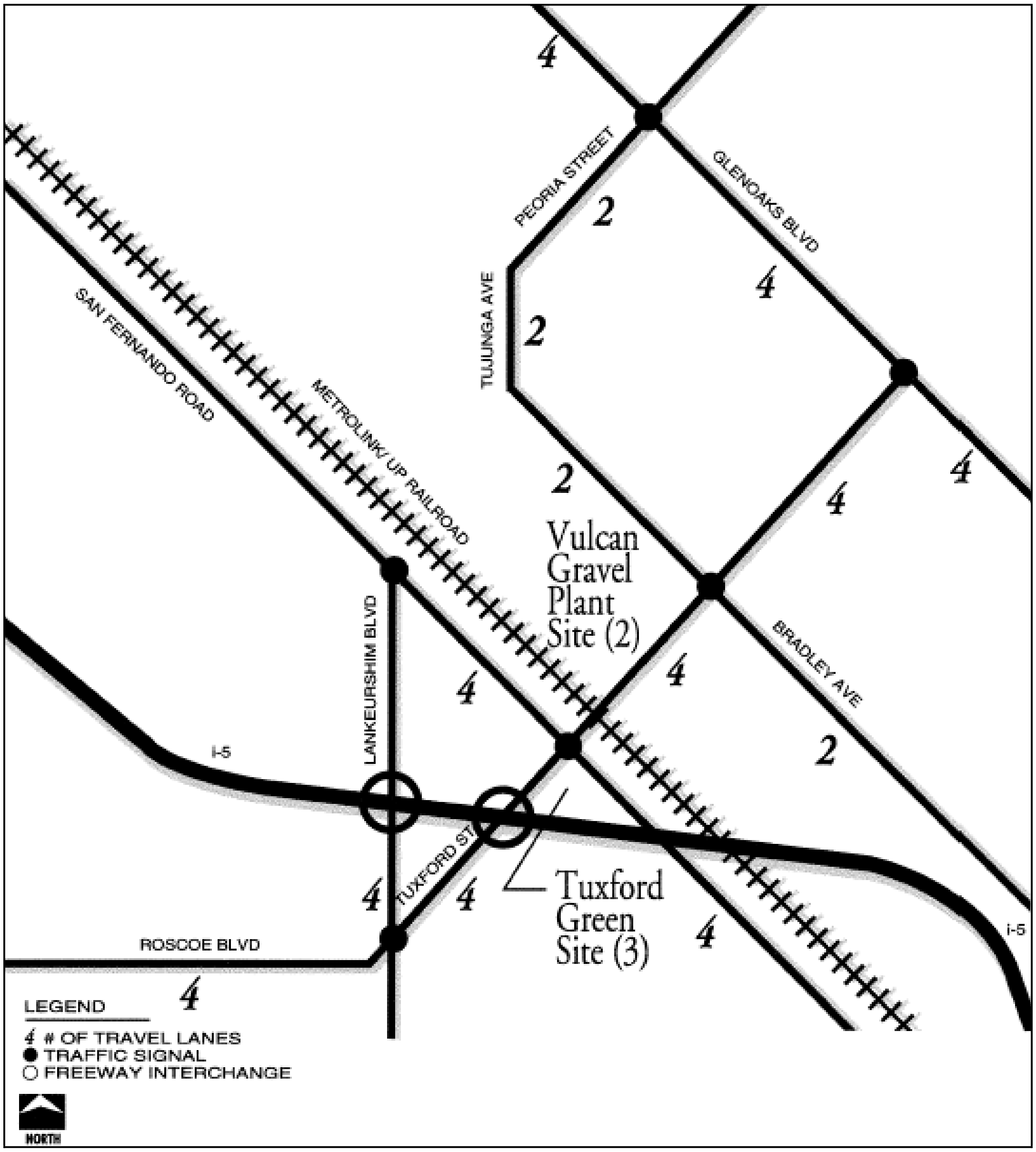

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Table 4.11-3
Existing Traffic Volumes & Levels of Service
Streets in Vulcan Gravel Processing Plant Vicinity

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Tuxford Street						
At Bradley Avenue	4	25,000	1480e/1010w	950e/1080w	0.92-E	0.68-B
At San Fernando Rd	4	33,000	1610e/1060w	1360e/1240w	1.01-F	0.85-D
San Fernando Road						
At Tuxford Street	4	20,000	570n/830s	850n/910s	0.52-A	0.57-A
Glenoaks Boulevard						
At Tuxford Street	4	22,000	750n/1300s	1110n/950s	0.81-D	0.69-B
Bradley Avenue						
At Tuxford Street	2	8,000	280n/320s	350n/290s	0.40-A	0.44-A

Source: City of Los Angeles Department of Transportation & Field Reconnaissance, 2002.

Tuxford Green. The streets that provide access to the Tuxford Green site include Tuxford Street and San Fernando Road. These two streets abut the triangular Tuxford Green site on the northwest and northeast sides of the site, respectively, while the Golden State Freeway (I-5) right-of-way abuts the south side of the site. **Figure 4.11-2** depicts the layout of these streets and shows the existing number of travel lanes on each street segment and the location of the signalized intersections. Tuxford Street has an interchange with the Golden Street Freeway (I-5) adjacent to the site. A Union Pacific/Metrolink railroad track runs adjacent to San Fernando Road across the street from the Tuxford Green site.

Table 4.11-4 shows the existing daily and peak hour traffic volumes and the number of travel lanes at representative locations on the streets in the Tuxford Green vicinity. Also shown are the volume/capacity (V/C) ratios and levels of service (LOS) for the peak direction of travel on each street segment for the morning and afternoon peak hours.

Table 4.11-4
Existing Traffic Volumes & Levels of Service
Streets in Tuxford Green Vicinity

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Tuxford Street						
At San Fernando Rd	4	33,000	1610e/1060w	1360e/1240w	1.01-F	0.85-D
San Fernando Road						
At Tuxford Street	4	20,000	570n/830s	850n/910s	0.52-A	0.57-A

Source: City of Los Angeles Department of Transportation & Field Reconnaissance, 2002.

Sun Valley Middle School. The major streets that provide access to the Sun Valley Middle School site include Sherman Way, Tujunga Avenue, and Vineland Avenue, while the local streets immediately adjacent to the school are Fair Avenue, Bakman Avenue, and Valerio Street. **Figure 4.11-3** depicts the layout of these streets and shows the existing number of travel lanes on each street segment and the location of the signalized intersections. Sherman Way has an interchange with the Hollywood Freeway (SR 170) west of the school site, while Vineland Avenue provides a link to the Golden Street Freeway (I-5) via a Sunland Boulevard interchange north of the school site.

Table 4.11-5 shows the existing daily and peak hour traffic volumes and the number of travel lanes at representative locations on the major streets in the vicinity of Sun Valley Middle School. Also shown are the volume/capacity (V/C) ratios and levels of service (LOS) for the peak direction of travel on each street segment for the morning and afternoon peak hours.

Figure 4.11-3
Existing Street Network – Sun Valley Middle School and Parking Lot on Sherman

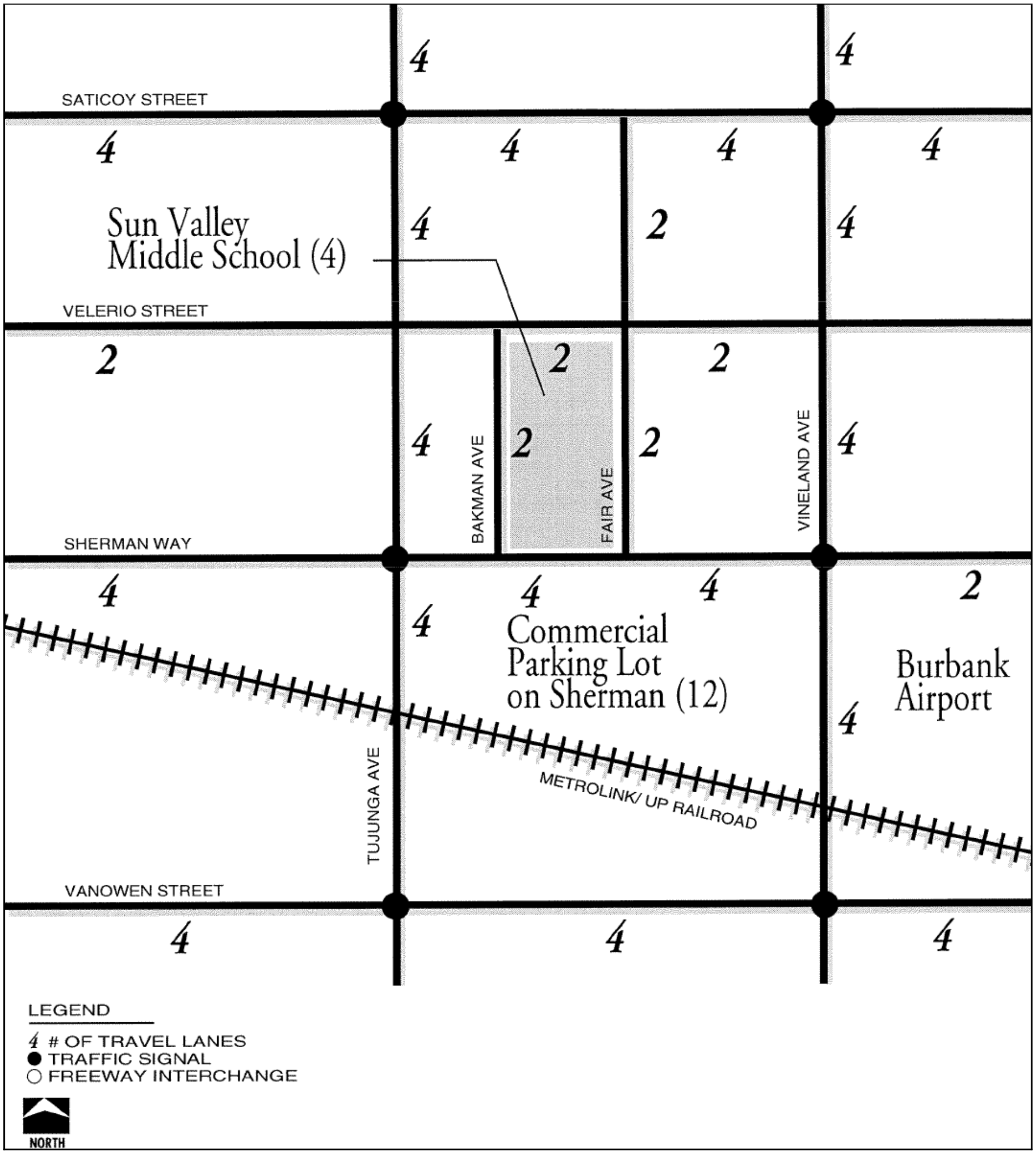

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Table 4.11-5
Existing Traffic Volumes & Levels of Service
Streets in Vicinity of Sun Valley Middle School

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Sherman Way						
At Tujunga Avenue	4	22,000	920e/550w	1210e/830w	0.58-A	0.76-C
At Vineland Avenue	4	15,000	710e/430w	820e/620w	0.44-A	0.51-A
Tujunga Avenue						
At Sherman Way	4	14,000	550n/850s	780n/650s	0.53-A	0.49-A
Vineland Avenue						
At Sherman Way	4	30,000	840n/1420s	1350n/1240s	0.89-D	0.84-D

Source: City of Los Angeles Department of Transportation & Field Reconnaissance, 2002.

New Park on Wentworth. The major streets that provide access to the New Park on Wentworth include Wentworth Street, Sheldon Street, and Glenoaks Boulevard, while the local streets adjacent to the site are Stonehurst Avenue, Wealtha Avenue, and Bromont Avenue. **Figure 4.11-4** depicts the layout of these streets and shows the existing number of travel lanes on each street segment and the location of the signalized intersections. Sheldon Street has an interchange with the Golden Street Freeway (I-5) and the Hollywood Freeway (SR 170) southwest of the Wentworth site.

Table 4.11-6 shows the existing daily and peak hour traffic volumes and the number of travel lanes at representative locations on the major streets in the vicinity of the New Park on Wentworth. Also shown are the volume/capacity (V/C) ratios and levels of service (LOS) for the peak direction of travel on each street segment for the morning and afternoon peak hours.

Figure 4.11-4
Existing Street Network – New Park on Wentworth and Sheldon Pit

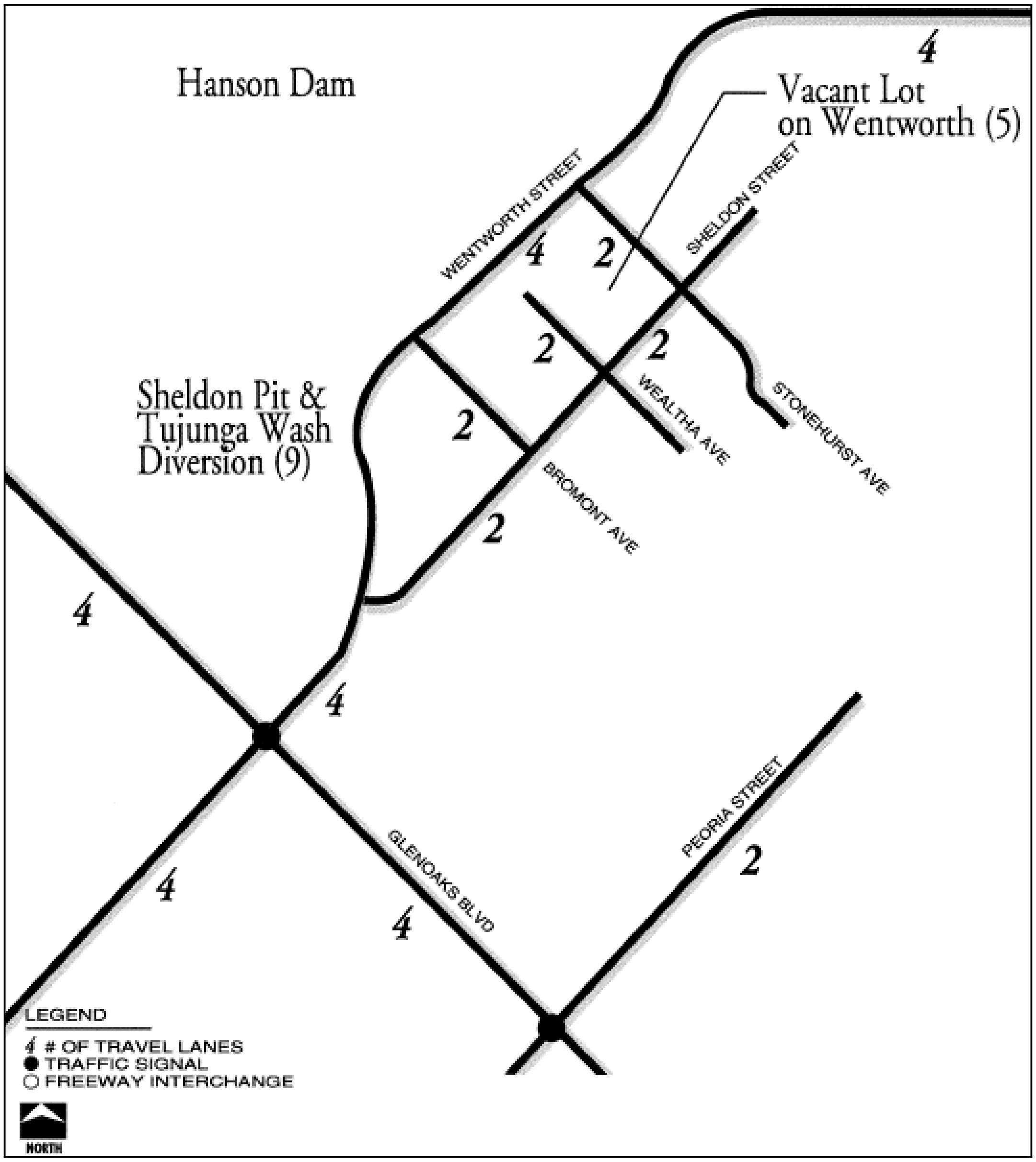

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Table 4.11-6
Existing Traffic Volumes & Levels of Service
Streets in Vicinity of New Park on Wentworth

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Wentworth Street At Stonehurst Ave	4	11,000	460e/660w	630e/320w	0.41-A	0.39-A
Sheldon Street At Glenoaks Blvd	4	15,000	620e/920w	890e/400w	0.58-A	0.56-A
Glenoaks Boulevard At Sheldon Street	4	24,000	810n/1320s	1240n/1240s	0.82-D	0.78-C

Source: City of Los Angeles Department of Transportation & Field Reconnaissance, 2002.

Stonehurst Park. The major streets that provide access to the Stonehurst Park site include Wentworth Street, Peoria Street, Stonehurst Avenue, and Sunland Boulevard, while the local streets in the immediate vicinity of the site include Allegheny Street, Wicks Street, and Dronfield Avenue. **Figure 4.11-5** depicts the layout of these streets and shows the existing number of travel lanes on each street segment and the location of the signalized intersections. Sunland Boulevard has an interchange with the Golden State Freeway (I-5) south of the site and an interchange with the Foothill Freeway (I-210) northeast of the site.

Table 4.11-7 shows the existing daily and peak hour traffic volumes and the number of travel lanes at representative locations on the major streets in the vicinity of Stonehurst Park. Also shown are the volume/capacity (V/C) ratios and levels of service (LOS) for the peak direction of travel on each street segment for the morning and afternoon peak hours.

Figure 4.11-5
Existing Street Network – Stonehurst Park, Stonehurst Elementary School, and Cal Mat Pit

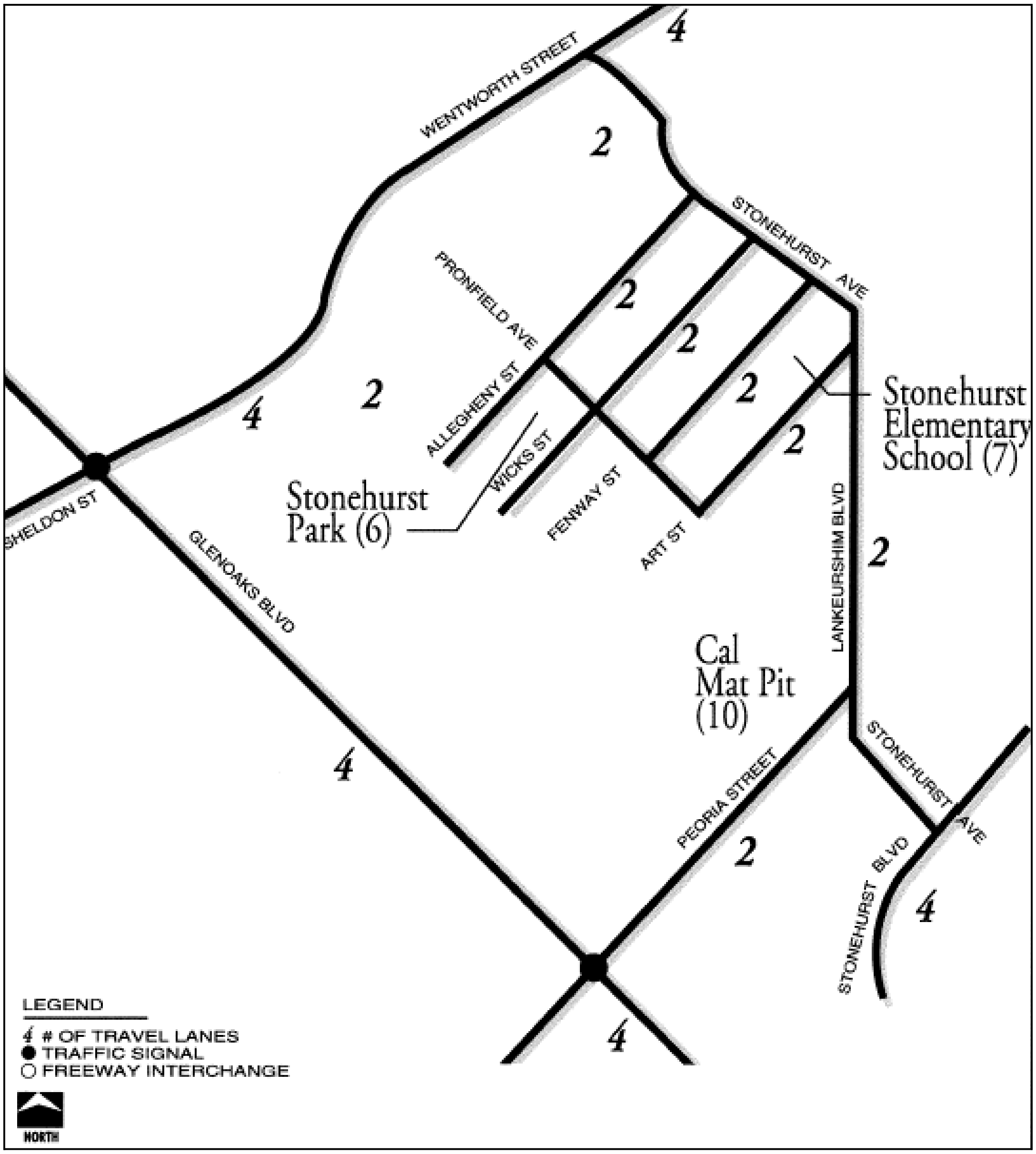

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Table 4.11-7
Existing Traffic Volumes & Levels of Service
Streets in Vicinity of Stonehurst Park and Stonehurst Elementary School

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Wentworth Street At Stonehurst Ave	4	11,000	460e/660w	630e/320w	0.41-A	0.39-A
Stonehurst Avenue At Sunland Blvd	2	8,000	370n/510s	530n/400s	0.64-B	0.66-B
Peoria Street At Stonehurst Ave	2	7,000	340e/390w	400e/320w	0.49-A	0.50-A
Sunland Boulevard At Stonehurst Ave	4	16,000	590n/820s	850n/480s	0.51-A	0.53-A

Source: City of Los Angeles Department of Transportation & Field Reconnaissance, 2002.

Stonehurst Elementary School. The major streets that provide access to the Stonehurst Elementary School site include Wentworth Street, Peoria Street, Stonehurst Avenue, and Sunland Boulevard while the local streets in the immediate vicinity of the school site include Fenway Street and Art Street. **Figure 4.11-5** depicts the layout of these streets and shows the existing number of travel lanes on each street segment and the location of the signalized intersections. Sunland Boulevard has an interchange with the Golden State Freeway (I-5) south of the site and an interchange with the Foothill Freeway (I-210) northeast of the site.

Table 4.11-7 shows the existing daily and peak hour traffic volumes and the number of travel lanes at representative locations on the major streets in the vicinity of Stonehurst Elementary School. Also shown are the volume/capacity (V/C) ratios and levels of service (LOS) for the peak direction of travel on each street segment for the morning and afternoon peak hours.

Roscoe Elementary School. The major streets that provide access to the Roscoe Elementary School site include San Fernando Road, Strathern Street, Clybourn Avenue, and Sunland Boulevard while the local streets in the immediate vicinity of the site include White Street, Cleon Avenue, Satsuma Avenue, and Riverton Avenue. **Figure 4.11-6** depicts the layout of these streets and shows the existing number of travel lanes on each street segment and the location of the signalized intersections. Sunland Boulevard has an interchange with the Golden Street Freeway (I-5) north of the school site.

Table 4.11-8 shows the existing daily and peak hour traffic volumes and the number of travel lanes at representative locations on the major streets in the vicinity of Roscoe Elementary School. Also shown are the volume/capacity (V/C) ratios and levels of service (LOS) for the peak direction of travel on each street segment for the morning and afternoon peak hours.

Figure 4.11-6
Existing Street Network – Roscoe Elementary School

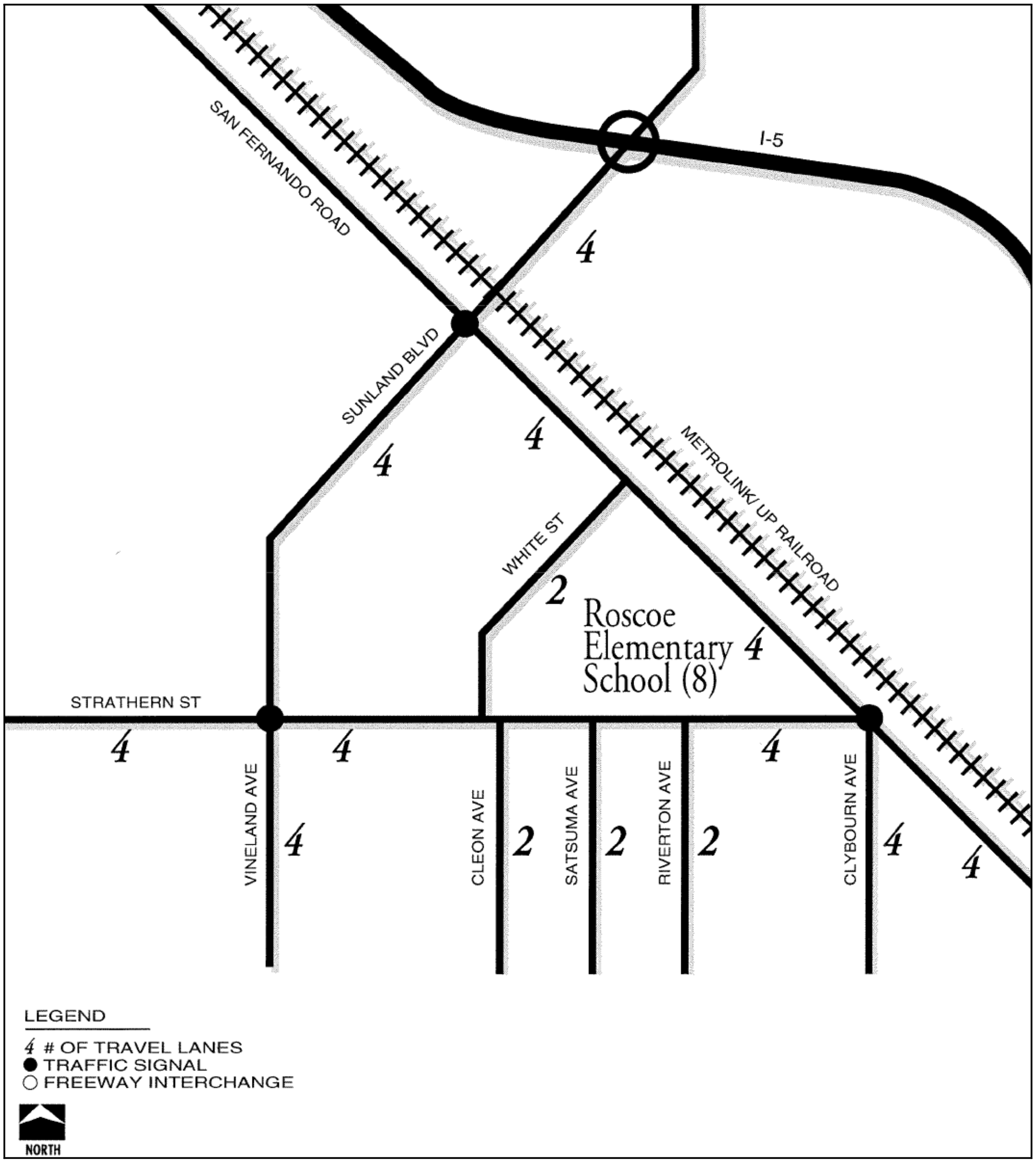

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Table 4.11-8
Existing Traffic Volumes & Levels of Service
Streets in Vicinity of Roscoe Elementary School

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
San Fernando Road At Sunland Blvd	4	22,000	420n/1530s	1690n/750s	0.96-E	1.06-F
Strathern Street At San Fernando Rd	4	12,000	430e/460w	540e/560w	0.29-A	0.35-A
Clybourn Avenue At Strathern Street	4	8,000	440n/480s	510n/420s	0.30-A	0.32-A
Vineland Avenue At Strathern Street	4	32,000	860n/1400s	1270n/1530s	0.88-D	0.96-E
Sunland Boulevard At San Fernando Rd	4	31,000	890n/1310s	1250n/1480s	0.82-D	0.93-E

Source: City of Los Angeles Department of Transportation & Field Reconnaissance, 2002.

Sheldon Pit and Tujunga Wash Diversion. The streets that provide access to the vicinity of the Sheldon Pit and Tujunga Wash Diversion are Wentworth Street, Sheldon Street, and Glenoaks Boulevard. **Figure 4.11-4** depicts the layout of these streets and shows the existing number of travel lanes on each street segment and the location of the signalized intersections. Sheldon Street has an interchange with the Golden Street Freeway (I-5) and the Hollywood Freeway (SR 170) southwest of the Sheldon Pit/Tujunga Wash Diverson site.

Table 4.11-9 shows the existing daily and peak hour traffic volumes and the number of travel lanes at representative locations on the major streets in the vicinity of Sheldon Pit. Also shown are the volume/capacity (V/C) ratios and levels of service (LOS) for the peak direction of travel on each street segment for the morning and afternoon peak hours.

Table 4.11-9
Existing Traffic Volumes & Levels of Service
Streets in Vicinity of Sheldon Pit & Tujunga Wash Diversion

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Wentworth Street At Stonehurst Ave	4	11,000	460e/660w	630e/320w	0.41-A	0.39-A
Sheldon Street At Glenoaks Blvd	4	15,000	620e/920w	890e/400w	0.58-A	0.56-A
Glenoaks Boulevard At Sheldon Street	4	24,000	810n/1320s	1240n/1240s	0.82-D	0.78-C

Source: City of Los Angeles Department of Transportation & Field Reconnaissance, 2002.

Cal Mat Pit. The major streets that provide access to the Cal Mat Pit site include Peoria Street, Stonehurst Avenue, Glenoaks Boulevard, and Sunland Boulevard. **Figure 4.11-5** depicts the layout of these streets and shows the existing number of travel lanes on each street segment and the location of the signalized intersections. Sunland Boulevard has an interchange with the Golden State Freeway (I-5) south of the site and an interchange with the Foothill Freeway (I-210) northeast of the site.

Table 4.11-10 shows the existing daily and peak hour traffic volumes and the number of travel lanes at representative locations on the streets in the vicinity of Cal Mat Pit. Also shown are the volume/capacity (V/C) ratios and levels of service (LOS) for the peak direction of travel on each street segment for the morning and afternoon peak hours.

Table 4.11-10
Existing Traffic Volumes & Levels of Service
Streets in Vicinity of Cal Mat Pit

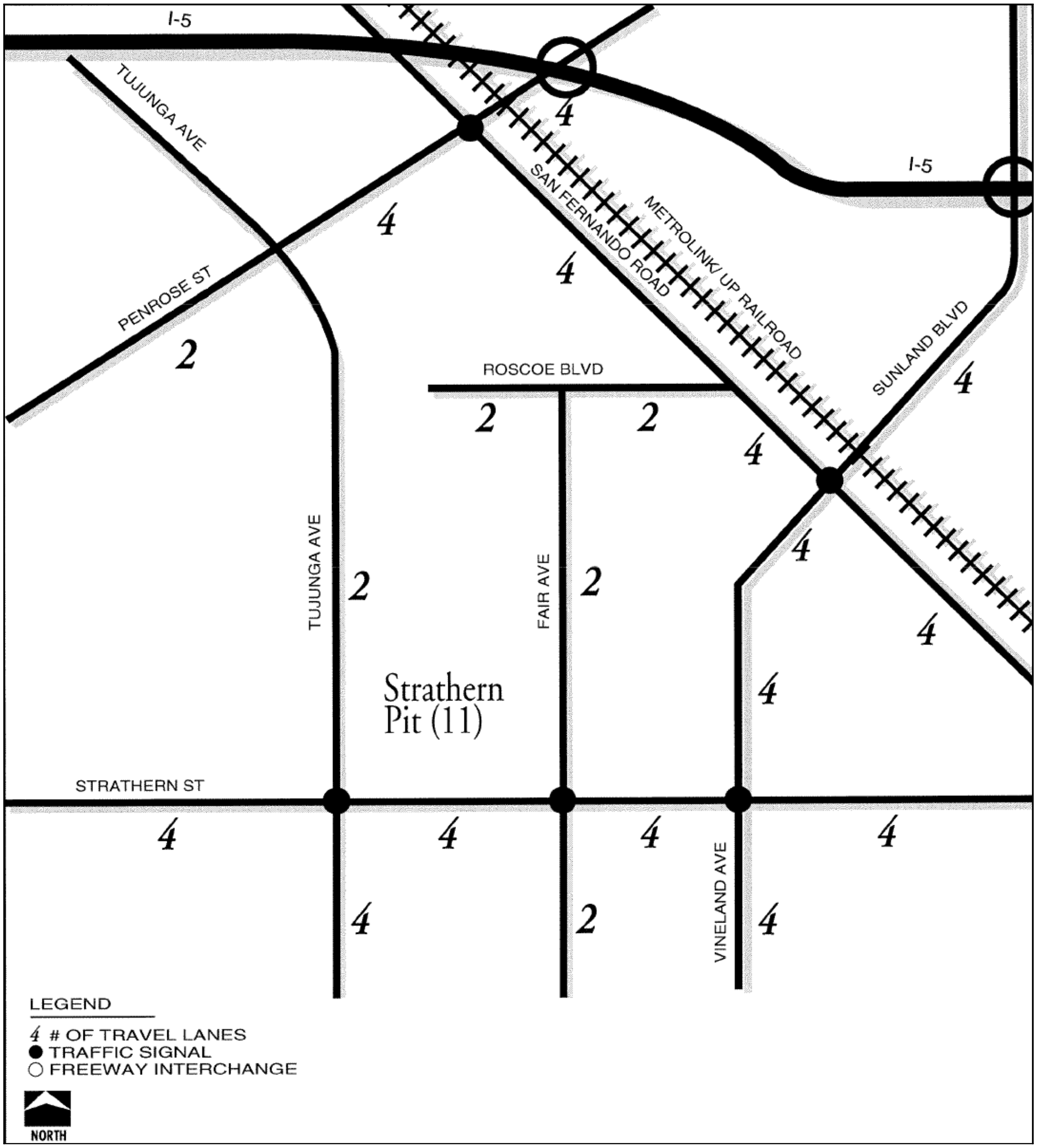
Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Stonehurst Avenue At Sunland Blvd	2	8,000	370n/510s	530n/400s	0.64-B	0.66-B
Peoria Street At Stonehurst Ave	2	7,000	340e/390w	400e/320w	0.49-A	0.50-A
Sunland Boulevard At Stonehurst Ave	4	16,000	590n/820s	850n/480s	0.51-A	0.53-A
Glenoaks Boulevard At Tuxford Street	4	22,000	750n/1300s	1110n/950s	0.81-D	0.69-B

Source: City of Los Angeles Department of Transportation & Field Reconnaissance, 2002.

Strathern Pit. The streets that provide access to the Strathern Pit site include Strathern Street, Tujunga Avenue, Fair Avenue, Vineland Avenue, and Sunland Boulevard. **Figure 4.11-7** depicts the layout of these streets and shows the existing number of travel lanes on each street segment and the location of the signalized intersections. Sunland Boulevard has an interchange with the Golden Street Freeway (I-5) north of the Strathern Pit site.

Table 4.11-11 shows the existing daily and peak hour traffic volumes and the number of travel lanes at representative locations on the streets in the vicinity of the Strathern Pit site. Also shown are the volume/capacity (V/C) ratios and levels of service (LOS) for the peak direction of travel on each street segment for the morning and afternoon peak hours.

Figure 4.11-7
Existing Street Network – Strathern Pit



Not to scale

Table 4.11-11
Existing Traffic Volumes & Levels of Service
Streets in Strathern Pit Vicinity

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Strathern Street						
East of Fair Ave	4	12,000	430e/460w	540e/560w	0.29-A	0.35-A
West of Fair Ave	2	12,000	430e/460w	540e/560w	0.58-A	0.70-C
Tujunga Avenue						
At Strathern Street	2	15,000	700n/730s	780n/610s	0.91-E	0.98-E
Fair Avenue						
At Strathern Street	2	3,000	130n/160s	180n/130s	0.20-A	0.22-A
Vineland Avenue						
At Strathern Street	4	32,000	860n/1400s	1270n/1530s	0.88-D	0.96-E
Sunland Boulevard						
At San Fernando Rd	4	31,000	890n/1310s	1250n/1480s	0.82-D	0.93-E

Source: City of Los Angeles Department of Transportation & Field Reconnaissance, 2002.

Parking Lot on Sherman. The major streets that provide access to the Parking Lot on Sherman include Sherman Way, Tujunga Avenue, and Vineland Avenue. **Figure 4.11-3** depicts the layout of these streets and shows the existing number of travel lanes on each street segment and the location of the signalized intersections. Sherman Way has an interchange with the Hollywood Freeway (SR 170) west of the parking lot site, while Vineland Avenue provides a link to the Golden Street Freeway (I-5) via a Sunland Boulevard interchange north of the site.

Table 4.11-12 shows the existing daily and peak hour traffic volumes and the number of travel lanes at representative locations on the major streets in the vicinity of the Parking Lot on Sherman. Also shown are the volume/capacity (V/C) ratios and levels of service (LOS) for the peak direction of travel on each street segment for the morning and afternoon peak hours.

Table 4.11-12
Existing Traffic Volumes & Levels of Service
Streets in Vicinity of the Parking Lot on Sherman

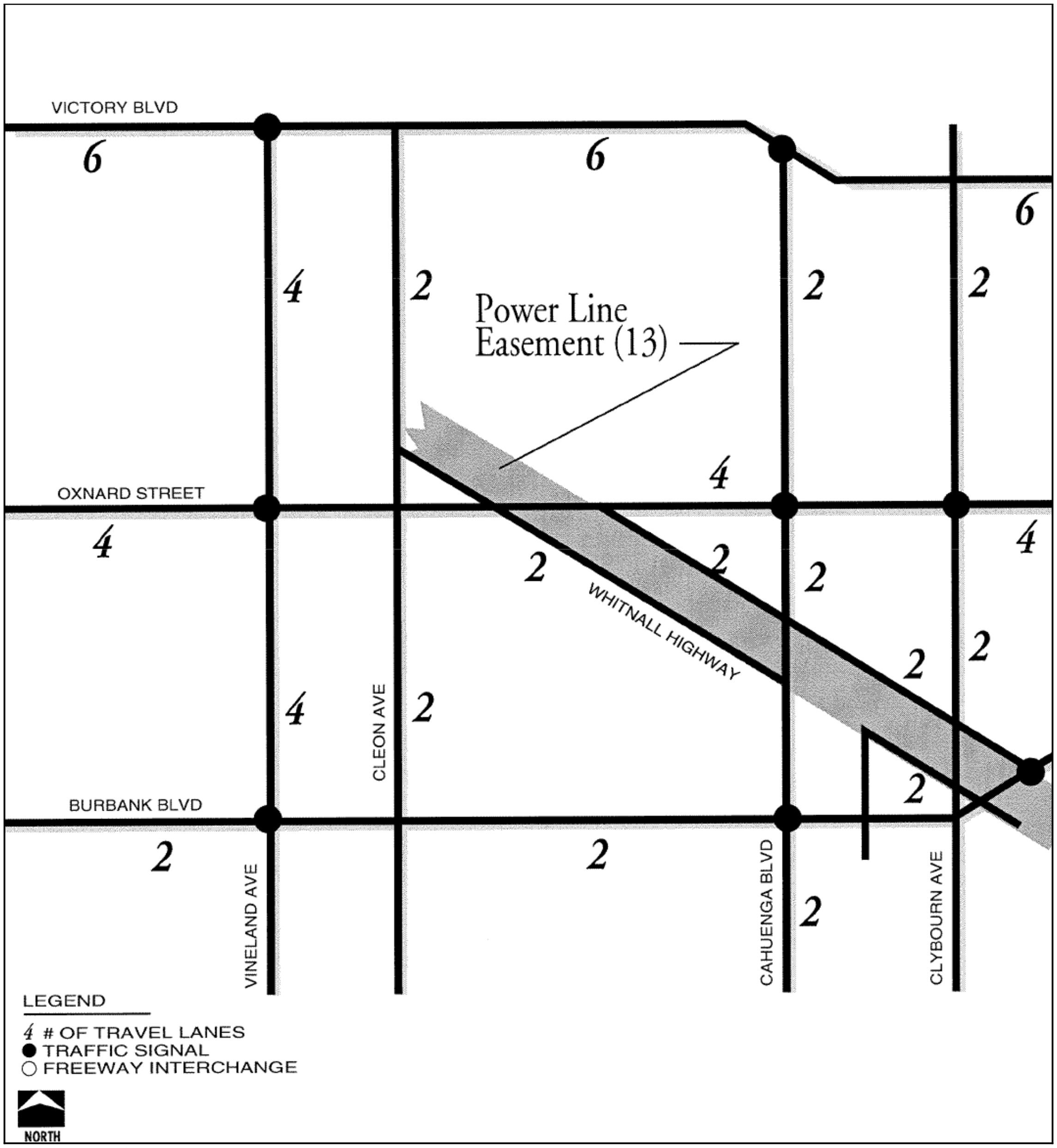
Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Sherman Way						
At Tujunga Avenue	4	22,000	920e/550w	1210e/830w	0.58-A	0.76-C
At Vineland Avenue	4	15,000	710e/430w	820e/620w	0.44-A	0.51-A
Tujunga Avenue						
At Sherman Way	4	14,000	550n/850s	780n/650s	0.53-A	0.49-A
Vineland Avenue						
At Sherman Way	4	30,000	840n/1420s	1350n/1240s	0.89-D	0.84-D

Source: City of Los Angeles Department of Transportation & Field Reconnaissance, 2002.

Power Line Easement. The major streets that provide access to the Power Line Easement site include Oxnard Street, Burbank Boulevard, Vineland Avenue, Cahuenga Boulevard, and Clybourn Avenue. In addition, there are several local streets in the vicinity of the Power Line Easement, such as Cleon Avenue, which is located at the northwest end of the Power Line Easement and Whitnall Highway, which runs adjacent to the Power Line Easement. **Figure 4.11-8** depicts the layout of these streets and shows the existing number of travel lanes on each street segment and the location of the signalized intersections. Oxnard Street and Burbank Boulevard have interchanges with the Hollywood Freeway (SR 170) west of the Power Line Easement and Burbank Boulevard has an interchange with the Golden Street Freeway (I-5) east of the Power Line Easement.

Table 4.11-13 shows the existing daily and peak hour traffic volumes and the number of travel lanes at representative locations on the major streets in the vicinity of the Power Line Easement. Also shown are the volume/capacity (V/C) ratios and levels of service (LOS) for the peak direction of travel on each street segment for the morning and afternoon peak hours.

Figure 4.11-8
Existing Street Network – Power Line Easement



Not to scale

Table 4.11-13
Existing Traffic Volumes & Levels of Service
Streets in Vicinity of the Power Line Easement

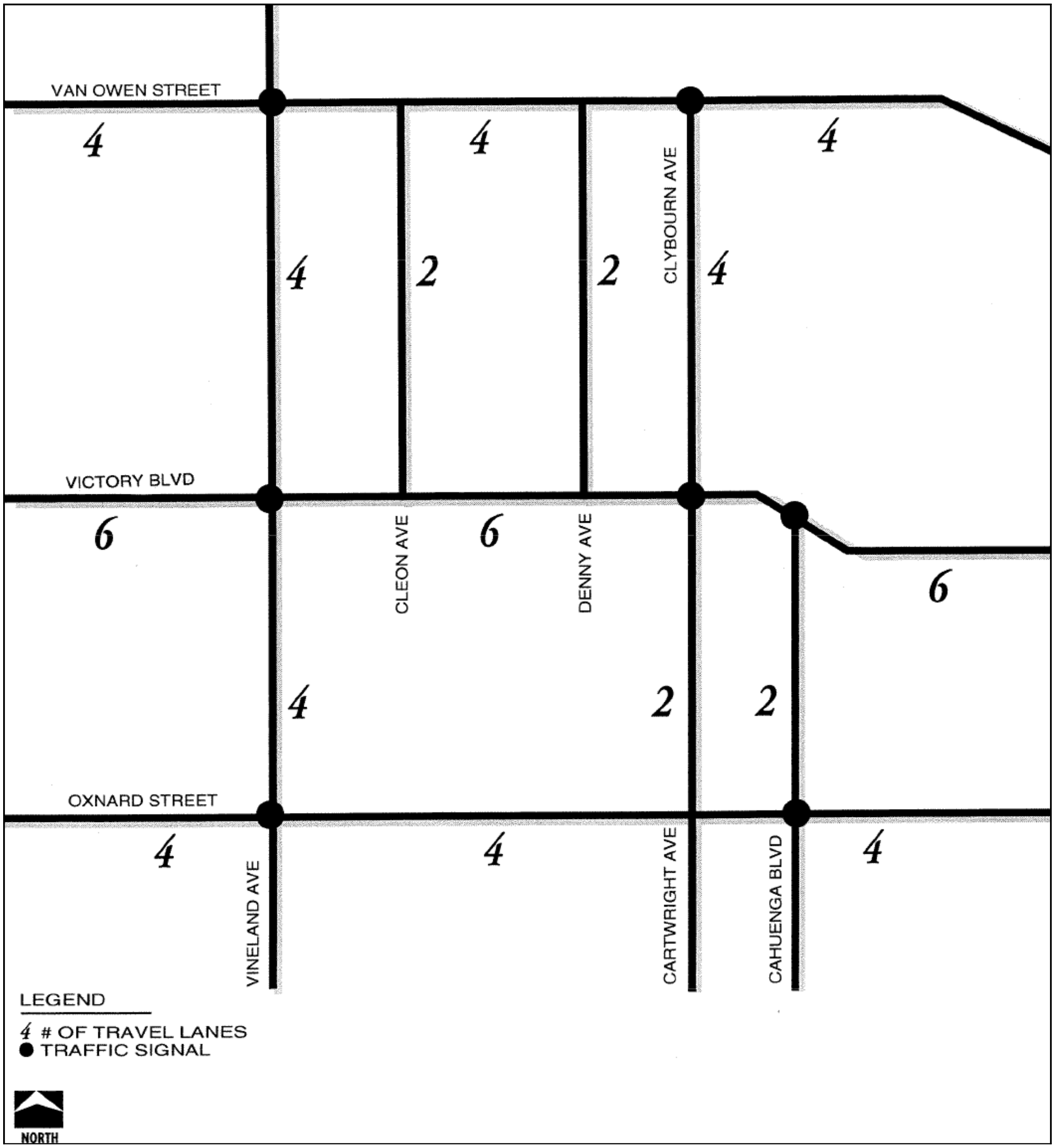
Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Oxnard Street						
At Vineland Avenue	4	10,000	250e/760w	1210e/830w	0.48-A	0.76-C
At Cahuenga Blvd	2	4,000	110e/290w	140e/160w	0.36-A	0.20-A
Burbank Boulevard						
At Cahuenga Blvd	2	19,000	820e/650w	780e/800w	1.02-F	1.00-E
At Vineland Avenue	2	27,000	830e/970w	890e/1120w	1.21-F	1.40-F
Vineland Avenue						
At Oxnard Street	4	28,000	840n/1420s	1190n/1240s	0.89-D	0.78-C
Cahuenga Boulevard						
At Oxnard Street	2	8,000	190n/290s	520n/270s	0.36-A	0.65-B
At Burbank Blvd	2	13,000	440n/550s	740n/370s	0.69-B	0.92-E
Clybourn Avenue						
At Burbank Blvd	2	6,000	280n/280s	280n/280s	0.35-A	0.35-A

Source: City of Los Angeles Department of Transportation & Field Reconnaissance, 2002.

Street Storage. This component involves installation of underground storage tanks within existing roadways in the southern portion of the project area. While specific locations for this component have not yet been determined, potential street segments for installation of the Street Storage component include: Cleon Avenue (between Victory Boulevard and Vanowen Street), Denny Avenue (between Victory Boulevard and Vanowen Street), Cartwright Avenue (south of Victory Boulevard), and potentially other streets in this vicinity. **Figure 4.11-9** depicts the layout of these streets and shows the existing number of travel lanes on each street segment and the location of the signalized intersections. The major streets that provide access to this area are Vanowen Street, Victory Boulevard, and Vineland Avenue. Victory Boulevard has an interchange with the Hollywood Freeway (State Route 170) to the west of the area proposed for use under this component.

Table 4.11-14 shows the existing daily and peak hour traffic volumes and the number of travel lanes at representative locations on the major streets that would be used as access routes to and from the Street Storage area. Also shown are the volume/capacity ratios and levels of service (LOS) for the peak direction of travel on each street segment for the morning and afternoon peak hours.

Figure 4.11-9
Existing Street Network – Street Storage



Not to scale

Table 4.11-14
Existing Traffic Volumes & Levels of Service
Major Streets Accessing Street Storage Vicinity

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Victory Boulevard At Vineland Avenue	6	27,000	960e/840w	1040e/1440w	0.40-A	0.60-B
Vanowen Street At Vineland Avenue	4	26,000	1150e/920w	1320e/1470w	0.72-C	0.92-E
Vineland Avenue At Victory Blvd	4	31,000	840n/1420s	1190n/1240s	0.89-D	0.78-C

Source: City of Los Angeles Department of Transportation & Field Reconnaissance, 2002.

Storm Drains. Storm drains would be installed within the street right-of-way in conjunction with all of the project components and alternatives. The existing conditions of the streets that would be affected by the storm drain installations were presented in the previous sections that described the roadway characteristics and traffic conditions for the streets in the vicinity of the individual project sites. Included among the streets that would be affected by the storm drain installations are the following.

Northern Watershed:
San Fernando Road
Tuxford Street
Norris Avenue
Glenoaks Boulevard
Peoria Street
Wentworth Street
Dronfield Avenue

Mid Watershed:
San Fernando Road
Penrose Street
Tujunga Avenue
Strathern Street
Vineland Avenue
Clybourn Avenue
Saticoy Street
Elmer Avenue
Case Avenue
Sherman Way

Southern Watershed:
Vineland Avenue
Vanowen Street
Clybourn Avenue
Victory Boulevard
Cahuenga Avenue
Whitnall Highway

Onsite BMPs. The Onsite BMPs (Best Management Practices) refer to stormwater runoff management methods that are utilized on public and private property, including residential, commercial, and industrial properties. As participation in these programs would be voluntary and the locations cannot be determined at this time, the existing setting could potentially include any of the streets and highways within the project area.

4.11.3 Significance Criteria

The significance criteria used to evaluate the traffic impacts of the Sun Valley Watershed Management Plan are outlined below, first for construction impacts then for operational impacts.

4.11.3.1 Construction Thresholds

Two general categories of construction impacts have been evaluated. The first was an evaluation of the impacts resulting from the traffic that would be generated by the construction activities at each watershed management site. The second was an evaluation of the physical impacts and disruptions that would occur on the roadways during pipeline construction. The significance criteria for these two construction categories are outlined below.

With regard to the impacts of construction traffic, the project impacts would be considered significant if one or more of the following conditions were to occur.

- The project would result in an increase in the volume/capacity ratio on a street that is projected to operate at a volume/capacity ratio greater than 0.85 (Source: Los Angeles County traffic analysis guidelines).

- The project would result in an increase in the demand/capacity ratio of 0.02 or greater on a freeway segment that is projected to operate at level of service F and/or at a D/C ratio that is greater than 1.00 (Source: Congestion Management Program for Los Angeles County).

With regard to the impacts of pipeline construction, the project impacts would be considered significant if one or more of the following conditions were to occur:

- The installation of a pipeline or other project feature within, adjacent to, or across a roadway would reduce the number of travel lanes during the peak traffic periods, thereby resulting in a temporary disruption to traffic flow and increased traffic congestion.

- A major roadway would be closed to through traffic as a result of construction activities.

- Construction activities would restrict access to or from adjacent land uses with no suitable alternative access.

- Construction activities would restrict the movements of emergency vehicles (police vehicles, fire vehicles, and ambulance/paramedic units) and there would be no reasonable alternative access routes available.

- Construction activities would disrupt bus service and there would be no suitable alternative routes or bus stops.

- Construction activities would impede pedestrian movements in the construction area and there would be no suitable alternative pedestrian access routes.

- Construction activities would result in safety problems for vehicular traffic, pedestrians, or transit operations.

4.11.3.2 Operation Thresholds

The operational impacts would be associated with the operation of the watershed sites and/or the use of the sites for supplemental recreational activities. With regard to operations, the project impacts would be considered significant if one or more of the following conditions were to occur.

- The project would result in an increase in the volume/capacity ratio on a street that is projected to operate at a volume/capacity ratio greater than 0.85 (Source: Los Angeles County traffic analysis guidelines).

- The project would result in an increase in the demand/capacity ratio of 0.02 or greater on a freeway segment that is projected to operate at level of service F and/or at a D/C ratio that is greater than 1.00 (Source: Congestion Management Program for Los Angeles County).

- The design and/or operation of the facilities would result in safety problems for vehicular traffic, pedestrians, or transit operations.

- The site would have inadequate parking facilities and the project-generated parking demand would result in a spillover of parked vehicles into a nearby neighborhood or adjacent land uses.

4.11.4 Construction Impacts

To address the construction impacts associated with the project, each site was evaluated by estimating the levels of traffic that would be generated by the construction activities, then quantifying the impacts of this additional traffic on the affected streets and highways. A comparative analysis of traffic volumes and levels of service with and without the proposed construction projects was conducted. Truck volumes as well as the volume of traffic generated by construction workers and miscellaneous trips were quantified. The trip generation characteristics were based on work force estimates and quantities of material that would be transported to and from the various sites on a typical day of construction activity.

While the target years of construction for the various project components have not yet been determined, it is proposed that the entire plan would be completed within a 10-year time frame. Based on traffic data and projections in the Congestion Management Program for Los Angeles County, the general traffic volume growth factors for the San Fernando Valley area indicate that there would be approximately a five percent growth in traffic volumes over the next 10 years. The existing traffic volumes were, therefore, expanded by a factor of 1.05 to estimate the future baseline traffic volumes. While the use of this overall growth factor may overestimate the baseline traffic volumes for the project components that would be constructed during a time frame that is less than 10 years, the standard rate has been used to establish a consistent baseline for the impact analysis, particularly since the actual years of construction are yet to be determined.

The evaluation of construction impacts also included the physical impacts associated with pipeline/storm drain construction in the public streets. This analysis characterized the traffic impacts that would most likely occur as a result of the traffic disruptions and lane blockages within the street right-of-way along the proposed pipeline/storm drain corridors. As these impacts would occur within the vicinity of essentially all of the individual project sites and as the impacts would be similar for each location, the discussion of the physical impacts associated with construction within the public streets is presented only in the "Storm Drain" section (to avoid redundant discussions in each individual project section).

4.11.4.1 Construction Impacts by Project Component

The traffic impacts associated with the construction activities at each individual project site are discussed in the following sections. The traffic generation estimates for each project site are based on the truck and automobile/light-duty vehicle trip characteristics shown in **Table 4.11-15**. While the number of trips generated by each construction activity would fluctuate from day to day and from week to week throughout the duration of a construction project, the traffic volumes shown in the table represent the assumed levels of traffic that would occur during a relatively busy day of construction activity for each project feature.

Table 4.11-15
Traffic Generation Assumptions – Construction Activities

Construction Feature/ Activity	Daily Traffic	Peak Hour Traffic			
		AM Peak Hour		PM Peak Hour	
		In	Out	In	Out
Detention/Infiltration Basin					
Trucks	80	10	10	10	10
Autos/Light-Duty Vehicles	80	20	4	4	20
Catch Basin					
Trucks	20	2	2	2	2
Autos/Light-Duty Vehicles	20	5	1	1	5
Pipeline					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Infiltration Devices					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Storage Tanks					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Repaving/Landscaping					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Channel/Culvert					
Trucks	80	10	10	10	10
Autos/Light-Duty Vehicles	80	20	4	4	20
Excavation/Fill					
Trucks	160	20	20	20	20
Autos/Light-Duty Vehicles	40	10	2	2	10
Railroad Track Removal					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10

Valley Steam Plant. The construction activities at the Valley Steam Plant are proposed to occur in two phases. Phase 1 would involve the construction of a 3.5-acre surface infiltration basin, four catch basins, and a pipeline on the plant property. The area around the basin would then be landscaped. Phase 2 would involve the removal of an existing railroad spur line followed by the construction of a 6-acre retention area, additional catch basins, and a pipeline on the surrounding streets; i.e., San Fernando Road, Sheldon Street, and Glenoaks Boulevard. The area around the retention area would then be landscaped.

The estimated volumes of traffic that would be generated by the proposed construction activities are shown in **Table 4.11-16**. The Phase 1 and Phase 2 construction activities would generate approximately the same volumes of traffic on a typical day of construction activity. It should be noted that while there are multiple catch basins to be constructed, it was assumed that the work crew would be constructing only one at any given time. This assumption is applicable for the various components throughout the analysis.

Table 4.11-16
Construction Traffic – Valley Steam Plant

Construction Feature/ Activity	Daily Traffic	Peak Hour Traffic			
		AM Peak Hour		PM Peak Hour	
		In	Out	In	Out
PHASE 1					
Infiltration Basin*					
Trucks	80	10	10	10	10
Autos/Light-Duty Vehicles	80	20	4	4	20
Catch Basin*					
Trucks	20	2	2	2	2
Autos/Light-Duty Vehicles	20	5	1	1	5
Pipeline*					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Landscaping					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
TOTAL – PHASE 1					
Trucks	140	17	17	17	17
Autos/Light-Duty Vehicles	140	35	7	7	35
PHASE 2					
Railroad Track Removal					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Retention Basin*					
Trucks	80	10	10	10	10
Autos/Light-Duty Vehicles	80	20	4	4	20
Catch Basin*					
Trucks	20	2	2	2	2
Autos/Light-Duty Vehicles	20	5	1	1	5
Pipeline*					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
TOTAL – PHASE 2					
Trucks	140	17	17	17	17
Autos/Light-Duty Vehicles	140	35	7	7	35

* Activities occurring simultaneously.

The impacts of the construction generated traffic on the study area roadways are summarized in **Table 4.11-17**. The distribution percentages indicate the proportion of the project generated traffic estimated to travel on each street. The percentages do not necessarily add up to 100 percent because some of the traffic may use more than one of the street segments that were addressed. The table indicates that the construction project would result in a less than significant traffic impact.

Table 4.11-17
Construction Traffic Impacts - Streets in Valley Steam Plant Vicinity

Street (% Distribution)	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Sheldon Street (80%)						
Baseline Conditions	4	16,000	650e/970w	930e/420w	0.61-B	0.58-A
With Project Traffic		16,220	692e/997w	957e/462w	0.62-B	0.60-A
San Fernando Rd (10%)						
Baseline Conditions	4	26,000	860n/1280s	1300n/980s	0.80-D	0.81-D
With Project Traffic		26,020	863n/1285s	1305n/983s	0.80-D	0.82-D
Glenoaks Blvd (10%)						
Baseline Conditions	4	25,000	850n/1390s	1300n/1300s	0.87-D	0.81-D
With Project Traffic		25,020	853n/1395s	1305n/1303s	0.87-D	0.82-D

Vulcan Gravel Processing Plant. The construction activities at the Vulcan Gravel Processing Plant would involve the construction of a six-acre retention area (detention and infiltration basin) and possibly a catch basin and a pipeline.

The estimated volumes of traffic that would be generated by the proposed construction activities are shown in **Table 4.11-18**.

Table 4.11-18
Construction Traffic – Vulcan Gravel Processing Plant

Construction Feature/ Activity	Daily Traffic	Peak Hour Traffic			
		AM Peak Hour		PM Peak Hour	
		In	Out	In	Out
Retention Basin*					
Trucks	80	10	10	10	10
Autos/Light-Duty Vehicles	80	20	4	4	20
Catch Basin*					
Trucks	20	2	2	2	2
Autos/Light-Duty Vehicles	20	5	1	1	5
Pipeline*					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
TOTAL					
Trucks	140	17	17	17	17
Autos/Light-Duty Vehicles	140	35	7	7	35

* Activities occurring simultaneously.

The impacts of the construction generated traffic on the study area roadways are summarized in **Table 4.11-19**. As shown, the construction project would have a significant impact on Tuxford Street during the AM and PM peak hours.

Table 4.11-19
Construction Traffic Impacts - Streets in Vulcan Gravel Processing Plant Vicinity

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Tuxford Street (80%)						
Baseline Conditions	4	35,000	1690e/1110w	1430e/1300w	1.06-F	0.89-D
With Project Traffic		35,220	1732e/1129w	1449e/1342w	**1.08-F**	**0.91-E**
San Fernando Rd (20%)						
Baseline Conditions	4	21,000	600n/870s	890n/960s	0.54-A	0.60-B
With Project Traffic		21,060	610n/875s	895n/970s	0.55-A	0.61-B
Glenoaks Blvd (10%)						
Baseline Conditions	4	23,000	790n/1370s	1170n/1000s	0.86-D	0.73-C
With Project Traffic		23,030	792n/1375s	1175n/1002s	0.86-D	0.73-C
Bradley Ave (10%)						
Baseline Conditions	2	8,500	290n/340s	370n/300s	0.43-A	0.46-A
With Project Traffic		8,530	292n/345s	375n/302s	0.43-A	0.47-A

NOTE: **Bold** values in the V/C ratio & LOS column indicate a significant traffic impact.

Tuxford Green. The construction activities at Tuxford Green would involve the construction of underground storage tanks, catch basins, and a pipeline.

The estimated volumes of traffic that would be generated by the proposed construction activities are shown in **Table 4.11-20**.

Table 4.11-20
Construction Traffic – Tuxford Green

Construction Feature/ Activity	Daily Traffic	Peak Hour Traffic			
		AM Peak Hour		PM Peak Hour	
		In	Out	In	Out
Storage Tanks*					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Catch Basin*					
Trucks	20	2	2	2	2
Autos/Light-Duty Vehicles	20	5	1	1	5
Pipeline*					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
TOTAL					
Trucks	100	12	12	12	12
Autos/Light-Duty Vehicles	100	25	5	5	25

* Activities occurring simultaneously.

The impacts of the construction generated traffic on the study area roadways are summarized in **Table 4.11-21**. As shown, the construction project would have a significant impact on Tuxford Street during the AM and PM peak hours.

Table 4.11-21
Construction Traffic Impacts - Streets in Tuxford Green Vicinity

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Tuxford Street (80%)						
Baseline Conditions	4	35,000	1690e/1110w	1430e/1300w	1.06-F	0.89-D
With Project Traffic		35,160	1720e/1124w	1444e/1330w	**1.08-F**	**0.90-E**
San Fernando Rd (50%)						
Baseline Conditions	4	21,000	600n/870s	890n/960s	0.54-A	0.60-B
With Project Traffic		21,100	619n/879s	899n/979s	0.55-A	0.61-B

NOTE: **Bold** values in the V/C ratio & LOS column indicate a significant traffic impact.

Sun Valley Middle School. The construction activities at the Sun Valley Middle School would involve grading/excavation, the construction of underground storage tanks/wells, catch basins, and a pipeline, and repaving/landscaping.

The estimated volumes of traffic that would be generated by the proposed construction activities are shown in **Table 4.11-22**.

Table 4.11-22
Construction Traffic – Sun Valley Middle School

Construction Feature/ Activity	Daily Traffic	Peak Hour Traffic			
		AM Peak Hour		PM Peak Hour	
		In	Out	In	Out
Excavation/Grading*					
Trucks	160	20	20	20	20
Autos/Light-Duty Vehicles	40	10	2	2	10
Storage Tanks*					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Catch Basin*					
Trucks	20	2	2	2	2
Autos/Light-Duty Vehicles	20	5	1	1	5
Pipeline*					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Repaving/Landscaping					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
TOTAL					
Trucks	240	32	32	32	32
Autos/Light-Duty Vehicles	140	35	7	7	35

* Activities occurring simultaneously.

The impacts of the construction generated traffic on the study area roadways are summarized in **Table 4.11-23**. As shown, the construction project would have a significant impact on Vineland Avenue during the AM peak hour.

Table 4.11-23
Construction Traffic Impacts - Streets in Vicinity of Sun Valley Middle School

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Sherman Way (80%)						
Baseline Conditions	4	23,000	970e/580w	1270e/870w	0.61-B	0.79-C
With Project Traffic		23,300	1024e/611w	1301e/924w	0.61-B	0.81-D
Tujunga Ave (10%)						
Baseline Conditions	4	15,000	580n/890s	820n/680s	0.56-A	0.51-A
With Project Traffic		15,040	584n/897s	827n/684s	0.56-A	0.52-A
Vineland Ave (10%)						
Baseline Conditions	4	32,000	880n/1490s	1420n/1300s	0.93-E	0.89-D
With Project Traffic		32,040	884n/1497s	1427n/1304s	**0.94-E**	0.89-D

NOTE: **Bold** values in the V/C ratio & LOS column indicate a significant traffic impact.

New Park on Wentworth. The construction activities at the New Park on Wentworth would involve grading/excavation, the construction of catch basins and a pipeline, and landscaping.

The estimated volumes of traffic that would be generated by the proposed construction activities are shown in **Table 4.11-24**.

Table 4.11-24
Construction Traffic – New Park on Wentworth

Construction Feature/ Activity	Daily Traffic	Peak Hour Traffic			
		AM Peak Hour		PM Peak Hour	
		In	Out	In	Out
Excavation/Grading*					
Trucks	160	20	20	20	20
Autos/Light-Duty Vehicles	40	10	2	2	10
Catch Basin*					
Trucks	20	2	2	2	2
Autos/Light-Duty Vehicles	20	5	1	1	5
Pipeline*					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Repaving/Landscaping					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
TOTAL					
Trucks	220	27	27	27	27
Autos/Light-Duty Vehicles	100	25	5	5	25

* Activities occurring simultaneously.

The impacts of the construction generated traffic on the study area roadways are summarized in **Table 4.11-25**. As shown, the construction project would result in a less than significant impact.

Table 4.11-25
Construction Traffic Impacts - Streets in Vicinity of New Park on Wentworth

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Wentworth St (90%)						
Baseline Conditions	4	12,000	480e/690w	660e/340w	0.43-A	0.41-A
With Project Traffic		12,290	517e/719w	689e/387w	0.45-A	0.43-A
Sheldon St (90%)						
Baseline Conditions	4	16,000	650e/970w	930e/420w	0.61-B	0.58-A
With Project Traffic		16.290	697e/999w	959e/467w	0.62-B	0.60-B
Glenoaks Blvd (10%)						
Baseline Conditions	4	25,000	850n/1390s	1300n/1300s	0.87-D	0.81-D
With Project Traffic		25,030	853n/1395s	1305n/1303s	0.87-D	0.82-D

Stonehurst Park. The construction activities at Stonehurst Park would involve grading/excavation, the construction of catch basins and a pipeline, and landscaping.

The estimated volumes of traffic that would be generated by the proposed construction activities are shown in **Table 4.11-26**.

Table 4.11-26
Construction Traffic – Stonehurst Park

Construction Feature/ Activity	Daily Traffic	Peak Hour Traffic			
		AM Peak Hour		PM Peak Hour	
		In	Out	In	Out
Excavation/Grading*					
Trucks	160	20	20	20	20
Autos/Light-Duty Vehicles	40	10	2	2	10
Catch Basin*					
Trucks	20	2	2	2	2
Autos/Light-Duty Vehicles	20	5	1	1	5
Pipeline*					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Landscaping					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
TOTAL					
Trucks	220	27	27	27	27
Autos/Light-Duty Vehicles	100	25	5	5	25

* Activities occurring simultaneously.

The impacts of the construction generated traffic on the study area roadways are summarized in **Table 4.11-27**. As shown, the construction project would result in a less than significant impact.

Table 4.11-27
Construction Traffic Impacts - Streets in Stonehurst Park Vicinity

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Wentworth St (20%)						
Baseline Conditions	4	12,000	480e/690w	660e/340w	0.43-A	0.41-A
With Project Traffic		12,060	490e/696w	666e/350w	0.44-A	0.42-A
Stonehurst Ave (80%)						
Baseline Conditions	2	8,500	390n/540s	560n/420s	0.68-B	0.70-C
With Project Traffic		8,760	432n/566s	586n/462s	0.71-C	0.73-C
Peoria St (10%)						
Baseline Conditions	2	7,500	360e/410w	420e/340w	0.51-A	0.53-A
With Project Traffic		7,530	365e/413w	423e/345w	0.52-A	0.53-A
Sunland Blvd (80%)						
Baseline Conditions	4	17,000	620n/860s	890n/500s	0.54-A	0.56-A
With Project Traffic		17,260	662n/886s	916n/542s	0.55-A	0.57-A

Stonehurst Elementary School. The construction activities at Stonehurst Elementary School would involve the installation of underground tanks and stormwater infiltration devices, then the surface areas would be restored with paving and landscaping.

The estimated volumes of traffic that would be generated by the proposed construction activities are shown in **Table 4.11-28**.

Table 4.11-28
Construction Traffic – Stonehurst Elementary School

Construction Feature/ Activity	Daily Traffic	Peak Hour Traffic			
		AM Peak Hour		PM Peak Hour	
		In	Out	In	Out
Infiltration Devices*					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Storage Tanks*					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Repaving/Landscaping					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
TOTAL					
Trucks	80	10	10	10	10
Autos/Light-Duty Vehicles	80	20	4	4	20

* Activities occurring simultaneously.

The impacts of the construction generated traffic on the study area roadways are summarized in **Table 4.11-29**. As shown, the construction project would result in a less than significant traffic impact.

Table 4.11-29
Construction Traffic Impacts - Streets in the Vicinity of Stonehurst Elementary School

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Wentworth St (20%)						
Baseline Conditions	4	12,000	480e/690w	660e/340w	0.43-A	0.41-A
With Project Traffic		12,030	486e/693w	663e/346w	0.43-A	0.41-A
Stonehurst Ave (80%)						
Baseline Conditions	2	8,500	390n/540s	560n/420s	0.68-B	0.70-C
With Project Traffic		8,630	414n/551s	571n/444s	0.69-B	0.71-C
Peoria St (10%)						
Baseline Conditions	2	7,500	360e/410w	420e/340w	0.51-A	0.53-A
With Project Traffic		7,520	363e/411w	421e/343w	0.51-A	0.53-A
Sunland Blvd (80%)						
Baseline Conditions	4	17,000	620n/860s	890n/500s	0.54-A	0.56-A
With Project Traffic		17,130	644n/871s	901n/524s	0.54-A	0.56-A

Roscoe Elementary School. The construction activities at Roscoe Elementary School would involve the installation of underground tanks and stormwater infiltration devices, then the surface areas would be restored with paving and landscaping.

The estimated volumes of traffic that would be generated by the proposed construction activities are shown in **Table 4.11-30**.

Table 4.11-30
Construction Traffic – Roscoe Elementary School

Construction Feature/ Activity	Daily Traffic	Peak Hour Traffic			
		AM Peak Hour		PM Peak Hour	
		In	Out	In	Out
Infiltration Devices*					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Storage Tanks*					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Repaving/Landscaping					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
TOTAL					
Trucks	80	10	10	10	10
Autos/Light-Duty Vehicles	80	20	4	4	20

* Activities occurring simultaneously.

The impacts of the construction generated traffic on the study area roadways are summarized in **Table 4.11-31**. As shown, the construction project would have a significant traffic impact on San Fernando Road and Sunland Boulevard during the AM and PM peak hours.

Table 4.11-31
Construction Traffic Impacts - Streets in the Vicinity of Roscoe Elementary School

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
San Fernando Rd (80%)						
Baseline Conditions	4	23,000	440n/1610s	1770n/790s	1.01-F	1.11-F
With Project Traffic		23,130	451n/1634s	1794n/801s	**1.02-F**	**1.12-F**
Strathern St (20%)						
Baseline Conditions	4	13,000	450e/480w	570e/590w	0.30-A	0.37-A
With Project Traffic		13,030	456e/483w	573e/596w	0.30-A	0.37-A
Clybourn Ave (10%)						
Baseline Conditions	4	8,500	460n/500s	540n/440s	0.31-A	0.34-A
With Project Traffic		8,520	463n/501s	541n/443s	0.31-A	0.34-A
Vineland Ave (20%)						
Baseline Conditions	4	34,000	900n/1470s	1330n/1610s	0.92-E	1.01-F
With Project Traffic		34,030	906n/1473s	1333n/1616s	0.92-E	1.01-F
Sunland Blvd (80%)						
Baseline Conditions	4	33,000	930n/1380s	1310n/1550s	0.86-D	0.97-E
With Project Traffic		33,130	954n/1391s	1321n/1574s	**0.87-D**	**0.98-E**

NOTE: **Bold** values in the V/C ratio & LOS column indicate a significant traffic impact.

Sheldon Pit and Tujunga Wash Diversion. The construction activities at Sheldon Pit and Tujunga Wash Diversion would involve the import of fill material, the installation of retention areas and an infiltration basin, and the construction of catch basins and pipelines in Glenoaks Boulevard and Sheldon Street. In addition, a section of the Tujunga Wash's concrete channel bottom would be lowered and a concrete box culvert would be constructed. Finally, landscaping and park amenities would be installed.

The estimated volumes of traffic that would be generated by the proposed construction activities are shown in **Table 4.11-32.**

Table 4.11-32
Construction Traffic – Sheldon Pit and Tujunga Wash Diversion

Construction Feature/ Activity	Daily Traffic	Peak Hour Traffic			
		AM Peak Hour		PM Peak Hour	
		In	Out	In	Out
Fill Material Import					
Trucks	160	20	20	20	20
Autos/Light-Duty Vehicles	40	10	2	2	10
Detention/Infiltration Basin*					
Trucks	80	10	10	10	10
Autos/Light-Duty Vehicles	80	20	4	4	20
Catch Basin*					
Trucks	20	2	2	2	2
Autos/Light-Duty Vehicles	20	5	1	1	5
Pipeline*					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Channel/Culvert*					
Trucks	80	10	10	10	10
Autos/Light-Duty Vehicles	80	20	4	4	20
Landscaping/Park Construction					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
TOTAL					
Trucks	220	27	27	27	27
Autos/Light-Duty Vehicles	220	55	11	11	55

* Activities occurring simultaneously.

The impacts of the construction generated traffic on the study area roadways are summarized in **Table 4.11-33**. As shown, the construction project would result in a less than significant traffic impact.

Table 4.11-33
Construction Traffic Impacts - Streets in the Vicinity of Sheldon Pit & Tujunga Wash

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Wentworth St (90%)						
Baseline Conditions	4	12,000	480e/690w	660e/340w	0.43-A	0.41-A
With Project Traffic		12,400	554e/724w	694e/414w	0.45-A	0.43-A
Sheldon St (90%)						
Baseline Conditions	4	16,000	650e/970w	930e/420w	0.61-B	0.58-A
With Project Traffic		16,400	724e/1004w	964e/494w	0.63-B	0.60-B
Glenoaks Blvd (10%)						
Baseline Conditions	4	25,000	850n/1390s	1300n/1300s	0.87-D	0.81-D
With Project Traffic		25,040	854n/1398s	1308n/1304s	0.87-D	0.82-D

Cal Mat Pit. The construction activities at Cal Mat Pit would be implemented in three phases. Phase 1 would involve the installation of a retention area (15-acre detention basin and 5-acre infiltration basin), import of fill material, and the construction of catch basins and pipelines in Glenoaks Boulevard, Peoria Street, and Dronfield Avenue. Then the area around the basins would be landscaped. The Interim Phase would involve the import of landfill and the construction of vertical pipes in the landfill material. Phase 2 would involve the construction of a 30-acre public park and the installation of additional catch basins and pipelines on the surrounding streets. The Phase 1 construction activities are proposed to occur over a three-year span, the Interim Phase would occur over the subsequent five-year period, and Phase 2 would be constructed in the remaining two years.

The estimated volumes of traffic that would be generated by the proposed construction activities are shown in **Table 4.11-34**. As Phase 1 would generate the highest traffic levels, the impact analysis was based on the Phase 1 scenario.

Table 4.11-34
Construction Traffic – Cal Mat Pit

Construction Feature/ Activity	Daily Traffic	Peak Hour Traffic			
		AM Peak Hour		PM Peak Hour	
		In	Out	In	Out
PHASE 1					
Fill Material Import*					
Trucks	160	20	20	20	20
Autos/Light-Duty Vehicles	40	10	2	2	10
Detention/Infiltration Basin*					
Trucks	80	10	10	10	10
Autos/Light-Duty Vehicles	80	20	4	4	20
Catch Basin*					
Trucks	20	2	2	2	2
Autos/Light-Duty Vehicles	20	5	1	1	5
Pipeline*					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Landscaping					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
TOTAL PHASE 1					
Trucks	300	37	37	37	37
Autos/Light-Duty Vehicles	180	45	9	9	45
INTERIM PHASE					
Fill Material Import*					
Trucks	160	20	20	20	20
Autos/Light-Duty Vehicles	40	10	2	2	10
Vertical Pipes*					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
TOTAL INTERIM PHASE					
Trucks	200	25	25	25	25
Autos/Light-Duty Vehicles	80	20	4	4	20
PHASE 2					
Landscaping/Park Construction*					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Catch Basin*					
Trucks	20	2	2	2	2
Autos/Light-Duty Vehicles	20	5	1	1	5
Pipeline*					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
TOTAL PHASE 2					
Trucks	100	12	12	12	12
Autos/Light-Duty Vehicles	100	25	5	5	25

* Activities occurring simultaneously during each phase.

The impacts of the construction generated traffic on the study area roadways are summarized in **Table 4.11-35**. As shown, the construction project would result in a less than significant traffic impact.

Table 4.11-35
Construction Traffic Impacts - Streets in the Vicinity of Cal Mat Pit

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Stonehurst Ave (30%)						
Baseline Conditions	2	8,000	370n/510s	530n/400s	0.64-B	0.66-B
With Project Traffic		8,140	395n/524s	544n/425s	0.66-B	0.68-B
Peoria St (70%)						
Baseline Conditions	2	7,000	340e/390w	400e/320w	0.49-A	0.50-A
With Project Traffic		7,340	397e/422w	432e/377w	0.53-A	0.54-A
Sunland Blvd (30%)						
Baseline Conditions	4	16,000	590n/820s	850n/480s	0.51-A	0.53-A
With Project Traffic		16,140	615n/834s	864n/505s	0.52-A	0.54-A
Glenoaks Blvd (50%)						
Baseline Conditions	4	22,000	750n/1300s	1110n/950s	0.81-D	0.69-B
With Project Traffic		22,240	773n/1341s	1151n/973s	0.81-D	0.72-C

Strathern Pit. The construction activities at the Strathern Pit would involve the installation of a retention area and the construction of a pipeline in Strathern Street, Tujunga Avenue, Penrose Street, San Fernando Road, and possibly Tuxford Street. In addition, landscaping and park amenities would be installed.

The estimated volumes of traffic that would be generated by the proposed construction activities are shown in **Table 4.11-36**.

Table 4.11-36
Construction Traffic – Strathern Pit

Construction Feature/ Activity	Daily Traffic	Peak Hour Traffic			
		AM Peak Hour		PM Peak Hour	
		In	Out	In	Out
Retention Area*					
Trucks	80	10	10	10	10
Autos/Light-Duty Vehicles	80	20	4	4	20
Pipeline*					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Landscaping/Park Construction					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
TOTAL					
Trucks	120	15	15	15	15
Autos/Light-Duty Vehicles	120	30	6	6	30

* Activities occurring simultaneously.

The impacts of the construction generated traffic on the study area roadways are summarized in **Table 4.11-37.** As shown, the construction project would have a significant traffic impact on Tujunga Avenue, Vineland Avenue, and Sunland Boulevard during the AM and PM peak hours.

Table 4.11-37
Construction Traffic Impacts - Streets in the Vicinity of Strathern Pit

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Strathern St (80%)						
Baseline Conditions	2	13,000	450e/480w	570e/590w	0.60-B	0.74-C
With Project Traffic		13,190	467e/516w	606e/607w	0.65-B	0.76-C
Tujunga Ave (20%)						
Baseline Conditions	2	16,000	740n/770s	820n/640s	0.96-E	1.03-F
With Project Traffic		16,050	744n/779s	829n/644s	**0.97-E**	**1.04-F**
Fair Ave (10%)						
Baseline Conditions	2	3,200	140n/170s	200n/140s	0.21-A	0.25-A
With Project Traffic		3,220	142n/175s	205n/142s	0.22-A	0.26-A
Vineland Ave (80%)						
Baseline Conditions	4	34,000	900n/1470s	1330n/1610s	0.92-E	1.01-F
With Project Traffic		34,190	917n/1506s	1366n/1627s	**0.94-E**	**1.02-F**
Sunland Blvd (80%)						
Baseline Conditions	4	33,000	930n/1380s	1310n/1550s	0.86-D	0.97-E
With Project Traffic		33,190	947n/1416s	1346n/1567s	**0.89-D**	**0.98-E**

NOTE: **Bold** values in the V/C ratio & LOS column indicate a significant traffic impact.

Parking Lot on Sherman. The construction activities at the Parking Lot on Sherman would involve the construction of underground storage tanks/infiltration devices and catch basins and pipelines would be installed in Sherman Way and Vineland Avenue. This would be followed by repaving and landscaping.

The estimated volumes of traffic that would be generated by the proposed construction activities are shown in **Table 4.11-38**.

Table 4.11-38
Construction Traffic – Parking Lot on Sherman

Construction Feature/ Activity	Daily Traffic	Peak Hour Traffic			
		AM Peak Hour		PM Peak Hour	
		In	Out	In	Out
Tanks/Infiltration Devices*					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Catch Basin*					
Trucks	20	2	2	2	2
Autos/Light-Duty Vehicles	20	5	1	1	5
Pipeline*					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Repaving/Landscaping					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
TOTAL					
Trucks	100	12	12	12	12
Autos/Light-Duty Vehicles	100	25	5	5	25

* Activities occurring simultaneously.

The impacts of the construction generated traffic on the study area roadways are summarized in **Table 4.11-39**. As shown, the construction project would result in a less than significant traffic impact.

Table 4.11-39
Construction Traffic Impacts - Streets in Vicinity of Parking Lot on Sherman

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Sherman Way (80%)						
Baseline Conditions	4	23,000	970e/580w	1270e/870w	0.61-B	0.79-C
With Project Traffic		23,160	1000e/594w	1284e/900w	0.63-C	0.80-D
Tujunga Ave (10%)						
Baseline Conditions	4	15,000	580n/890s	820n/680s	0.56-A	0.51-A
With Project Traffic		15,020	582n/894s	824n/682s	0.56-A	0.52-A
Vineland Ave (10%)						
Baseline Conditions	4	32,000	880n/1490s	1420n/1300s	0.93-E	0.89-D
With Project Traffic		32,020	882n/1494s	1424n/1302s	0.93-E	0.89-D

Power Line Easement. The construction activities at the Power Line Easement would involve the installation of sedimentation basins and infiltration basins within the power line easement along Whitnall Highway, while catch basins and pipelines may be installed in Oxnard Street, Cahuenga Avenue, and Whitnall Highway. This would be followed by landscaping.

The estimated volumes of traffic that would be generated by the proposed construction activities are shown in **Table 4.11-40**.

Table 4.11-40
Construction Traffic – Power Line Easement

Construction Feature/ Activity	Daily Traffic	Peak Hour Traffic			
		AM Peak Hour		PM Peak Hour	
		In	Out	In	Out
Sedimentation Basins*					
Trucks	80	10	10	10	10
Autos/Light-Duty Vehicles	80	20	4	4	20
Infiltration Basins*					
Trucks	80	10	10	10	10
Autos/Light-Duty Vehicles	80	20	4	4	20
Catch Basin*					
Trucks	20	2	2	2	2
Autos/Light-Duty Vehicles	20	5	1	1	5
Pipeline*					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Landscaping					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
TOTAL					
Trucks	220	27	27	27	27
Autos/Light-Duty Vehicles	220	55	11	11	55

* Activities occurring simultaneously.

The impacts of the construction generated traffic on the study area roadways are summarized in **Table 4.11-41**. As shown, the construction project would have a significant traffic impact on Burbank Boulevard during the AM and PM peak hours, on Vineland Avenue during the AM peak hour, and on Cahuenga Boulevard during the PM peak hour.

Table 4.11-41
Construction Traffic Impacts - Streets in Vicinity of Power Line Easement

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Oxnard St (50%)						
Baseline Conditions	4	11,000	260e/800w	1270e/870w	0.50-A	0.79-C
With Project Traffic		440	301e/819w	1289e/911w	0.51-A	0.81-D
Burbank Blvd (50%)						
Baseline Conditions	2	28,000	870e/1020w	930e/1180w	1.28-F	1.48-F
With Project Traffic		28,440	911e/1039w	949e/1221w	**1.30-F**	**1.53-F**
Vineland Ave (10%)						
Baseline Conditions	4	29,000	880n/1490s	1250n/1300s	0.93-E	0.81-D
With Project Traffic		29,040	884n/1498s	1258n/1304s	**0.94-E**	0.82-D
Cahuenga Blvd (10%)						
Baseline Conditions	2	14,000	460n/580s	780n/390s	0.73-C	0.98-E
With Project Traffic		14,040	464n/588s	788n/394s	0.74-C	**0.99-E**
Clybourn Ave (10%)						
Baseline Conditions	2	6,500	290n/290s	290n/290s	0.36-A	0.36-A
With Project Traffic		6,540	294n/298s	298n/294s	0.37-A	0.37-A

NOTE: **Bold** values in the V/C ratio & LOS column indicate a significant traffic impact.

Street Storage. Construction activities for the Street Storage component would involve installation of underground storage tanks beneath one or more roadways in the southern portion of the project area. While specific locations for this component have not yet been determined, potential street segments for installation of the Street Storage component include: Cleon Avenue (between Victory Boulevard and Vanowen Street), Denny Avenue (between Victory Boulevard and Vanowen Street), Cartwright Avenue (south of Victory Boulevard), and potentially other streets in this vicinity. This project component would result in traffic impacts associated with the generation of construction-related traffic as well as the physical impacts of installing storage tanks within the street right-of-way.

The estimated volumes of traffic that would be generated by the proposed construction activities are shown in **Table 4.11-42**.

Table 4.11-42
Construction Traffic – Street Storage

Construction Feature/ Activity	Daily Traffic	Peak Hour Traffic			
		AM Peak Hour		PM Peak Hour	
		In	Out	In	Out
Storage Tanks					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
Repaving					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10
TOTAL					
Trucks	40	5	5	5	5
Autos/Light-Duty Vehicles	40	10	2	2	10

NOTE: Activities do not occur simultaneously

The impacts of the construction generated traffic on the study area roadways are summarized in **Table 4.11-43**.

Table 4.11-43
Construction Traffic Impacts - Streets in Street Storage Vicinity

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Victory Blvd (75%)						
Baseline Conditions	6	28,000	1010e/880w	1090e/1510w	0.42-A	0.63-B
With Project Traffic		28,060	1022e/886w	1096e/1522w	0.43-A	0.63-B
Vanowen Street (25%)						
Baseline Conditions	4	27,000	1210e/970w	1390e/1540w	0.76-C	0.96-E
With Project Traffic		27,020	1214e/972w	1392/1544w	0.76-C	0.96-E
Vineland Ave (25%)						
Baseline Conditions	4	33,000	880n/1490s	1250n/1300s	0.93-E	0.81-D
With Project Traffic		33,020	882n/1494s	1254n/1302s	0.93-E	0.81-D

With regard to the physical impacts of installing storage tanks within the street right-of-way, the construction activities would result in lane blockages, roadway closures, increased traffic congestion, temporary elimination of street parking, blocked driveways, and blocked pedestrian paths in the construction zones. As the precise locations of the construction sites have not yet been established, the specific impacts cannot be identified for each affected roadway.

Storm Drains. The construction activities for the Storm Drains component of the project would include the construction of storm drains/pipelines on numerous streets within the Sun Valley Watershed Management Plan area. The volumes of traffic that would be generated by the storm drain construction projects were addressed in the analysis of the individual project sites. This section addresses the physical impacts of storm drain/pipeline construction that would occur as a result of traffic disruptions and lane blockages on the affected public streets. The streets that are expected to be impacted by these construction activities were listed previously in the Existing Conditions section.

The construction of storm drains/pipelines would typically require a construction zone that ranges from 20 to 50 feet in width and from 200 to 500 feet in length to accommodate the activities of digging a trench, installing the pipe, back-filling, compacting the fill material, and reconstructing/paving the surface area. It is anticipated that the construction zone would advance linearly along the route at an average rate of 200 to 500 feet per day. Any particular location would be directly impacted by the construction activities for a duration of one to five days under typical conditions.

As the precise locations of the pipelines and the exact width of the construction zones have not yet been established, the specific impacts cannot be identified for each affected roadway. The following discussion, therefore, outlines the impacts that would typically occur during construction of a pipeline/storm drain.

The typical impacts of the proposed pipeline/storm drain construction within public roadways are presented below.

- Lane blockages and increased traffic congestion in the vicinity of the construction activities.
- Roadway closures at locations where sufficient right-of-way is not available to maintain travel lanes through the work zone.
- Temporary elimination of on-street parking.
- Blocked access to adjacent land uses, including commercial, residential, industrial, and recreational properties.
- Blockages and disruption to pedestrian and bicycle circulation (sidewalks, crosswalks, bike lanes, etc.).
- Increased safety risks for vehicles, bicycles, and pedestrians.

- Increased response time for emergency vehicles (police, fire, and ambulance/paramedic units).

- Disruption to public transit service, including schedule delays, blocked bus stops, and blocked routes if a street is completely closed.

These impacts would constitute a significant traffic impact unless appropriate mitigation measures were implemented.

Onsite BMPs. The Onsite BMPs refer to relatively minor projects and features that would be installed primarily on private property, such as cisterns, dry wells, tree plantings, and mulching. As these projects are essentially the same as a minor site improvement projects that would occur at numerous locations throughout the watershed management area and over the 10-year span of the project, the traffic impacts would be negligible.

4.11.4.2 Construction Impacts by Alternative

Four alternatives have been developed for the Watershed Management Plan, each of which is a different combination of the various plan components. A comparative analysis of the four alternatives was conducted to determine the varying levels of impacts associated with each subset of projects. With regard to the traffic impacts during construction, the primary factors that were considered for the comparative analysis were the volumes of traffic that would be generated by the construction activities on a typical day and the number of streets that would be significantly impacted by the construction-related traffic.

While the impacts associated with temporary street blockages during the construction of pipelines within the street right-of-way would generally be another factor to consider in comparing the alternatives, the issue has little relevance for this analysis because all four alternatives are similar with regard to the length and location of the proposed pipelines, culverts, and storm drains in public streets. The alternatives range from 64,500 to 71,800 linear feet of impact, which represents only an 11 percent difference.

A comparison of the four alternatives relative to the volume of traffic that would be generated during construction is presented below in **Table 4.11-44**. Also shown is a fifth alternative, which represents the combination of project components that would result in the greatest traffic impact. Alternative 5, which was compiled to represent the worst-case scenario, would generate the highest total traffic volumes with 2,220 truck trips and 1,760 automobile/light-duty vehicle trips per day. It represents the assumption that all of the proposed project components would be implemented. Of the four proposed alternatives, Alternative 1 would have the highest traffic volumes with 1,700 truck trips and 1,360 automobile trips and Alternative 3 would have the lowest traffic volumes with 1,300 truck trips and 1,080 automobile trips per day. It should be noted that these traffic volumes would not occur simultaneously and would not necessarily occur in the same year, as project implementation would be spread out over a 10-year interval. The traffic volumes are presented and totaled so that the various alternatives can be compared.

Table 4.11-44
Comparison of Alternatives Relative to Generated Traffic Volumes

Plan Components	Project Generated Traffic (Trucks/Autos per Day)				
	Alt 1	**Alt 2**	**Alt 3**	**Alt 4**	**Alt 5**
Valley Steam Plant	140/140	140/140	140/140	140/140	140/140
Vulcan Gravel Plant	140/140	140/140	140/140	140/140	140/140
Tuxford Green	100/100	100/100	100/100	100/100	100/100
Sun Valley Middle School	240/140	240/140	240/140	240/140	240/140
New Park on Wentworth	220/100	0	0	0	220/100
Stonehurst Park	220/100	0	0	0	220/100
Stonehurst Elementary School	80/80	0	0	0	80/80
Roscoe Elementary School	80/80	0	0	0	80/80
Sheldon Pit	0	220/220	0	0	220/220
Cal Mat Pit	0	0	300/180	300/180	300/180
Strathern Pit	120/120	120/120	120/120	120/120	120/120
Parking Lot Sherman	100/100	100/100	0	100/100	100/100
Power Line Easement	220/220	220/220	220/220	220/220	220/220
Street Storage	40/40	40/40	40/40	40/40	40/40
Storm Drains	N/A	N/A	N/A	N/A	N/A
Onsite BMPs	N/A	N/A	N/A	N/A	N/A
Total Volume of Project Traffic	1700/1360	1320/1220	1300/1080	1400/1180	2220/1760

A comparison of the four alternatives relative to the number of streets that would be significantly impacted is presented in **Table 4.11-45**. Alternatives 1 and 5 would result in a significant impact on 11 street segments while Alternatives 2, 3, and 4 would result in a significant impact on nine street segments. Some of the street segments are represented more than one time because the various project components would not necessarily be constructed simultaneously.

Table 4.11-45
Comparison of Alternatives Relative to Significantly Impacted Streets

Plan Components	Significantly Impacted Streets				
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Valley Steam Plant	None	None	None	None	None
Vulcan Gravel Plant	Tuxford	Tuxford	Tuxford	Tuxford	Tuxford
Tuxford Green	Tuxford	Tuxford	Tuxford	Tuxford	Tuxford
Sun Valley Middle School	Vineland	Vineland	Vineland	Vineland	Vineland
New Park Wentworth	None	-	-	-	None
Stonehurst Park	None	-	-	-	None
Stonehurst Elementary School	None	-	-	-	None
Roscoe Elementary School	San Fernando Sunland	-	-	-	San Fernando Sunland
Sheldon Pit	-	None	-	-	None
Cal Mat Pit	-	-	None	None	None
Strathern Pit	Tujunga Vineland Sunland	Tujunga Vineland Sunland	Tujunga Vineland Sunland	Tujunga Vineland Sunland	Tujunga Vineland Sunland
Parking Lot Sherman	None	None	-	None	None
Power Line Easement	Burbank Vineland Cahuenga	Burbank Vineland Cahuenga	Burbank Vineland Cahuenga	Burbank Vineland Cahuenga	Burbank Vineland Cahuenga
Street Storage	None	None	None	None	None
Storm Drains	N/A	N/A	N/A	N/A	N/A
Onsite BMPs	None	None	None	None	None
Total No. of Streets w/ Significant Impact	**11**	**9**	**9**	**9**	**11**

4.11.5 Operational Impacts

To address the operational impacts associated with the project, each site was evaluated by estimating the levels of traffic that would be generated by the anticipated operation and maintenance activities, then quantifying the impacts of this site-generated traffic on the affected streets and highways. A comparative analysis of traffic volumes and levels of service with and without each proposed project component was conducted. The primary factors used to estimate the site-generated traffic volumes were the size and type of parks that are proposed for development at each site. While each site would also generate minor traffic volumes associated with maintenance, cleaning, sediment removal, and inspection of the watershed management facilities, these traffic levels would be negligible (typically less than 10 vehicle trips per day on an active day, with no traffic on most days at each site).

As the target years for the completion of the proposed parks have not yet been determined, all of the facilities would be completed within a 10-year time frame. Based on traffic data and projections in the Congestion Management Program for Los Angeles County, the general traffic volume growth factors for the San Fernando Valley area indicate that there would be approximately a five percent growth in traffic volumes over the next 10 years. The existing traffic volumes were, therefore, expanded by a factor of 1.05 to estimate the future baseline traffic volumes. While the use of this overall growth factor may overestimate the baseline traffic volumes for the project components that would be constructed during a time frame that is less than 10 years, the standard rate has been used to establish a consistent baseline for the impact analysis.

The traffic impacts associated with the operation of the park facilities proposed at each individual project site are discussed in the following sections. The traffic generation estimates for each project site are based on trip rates from the Institute of Transportation Engineers *Trip Generation* manual (6th Edition, 1997) for the County Park land use category. The average rate plus the standard deviation of the observed trip rates cited in the manual was used for the traffic projections.

Valley Steam Plant. As no public recreational facilities are proposed at this site, there would be no site-generated traffic during operation other than minor maintenance-related traffic.

Vulcan Gravel Processing Plant. As no recreational facilities are proposed at this site, there would be no site-generated traffic during operation other than minor maintenance-related traffic.

Tuxford Green. A one-acre park is proposed for the Tuxford Green site. The estimated volumes of traffic that would be generated on a typical day are shown in **Table 4.11-46**. This level of site-generated traffic (3 vehicle trips during the peak hours) would not have a significant traffic impact.

Table 4.11-46
Operation Traffic – Tuxford Green

Proposed Use: Park	Daily Traffic	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
Trip Generation Rates (vehicle trips per acre)	9.32	2.41	71%	29%	2.09	35%	65%
Generated Traffic (1 Acre)	9	3	2	1	3	1	2

Sun Valley Middle School. As no additional recreational facilities are proposed at this site, there would be no site-generated traffic during operation other than minor maintenance-related traffic.

New Park on Wentworth. A three-acre park is proposed for the New Park on Wentworth site. The estimated volumes of traffic that would be generated on a typical day are shown in **Table 4.11-47**. This level of site-generated traffic (7 vehicle trips during the peak hour) would not have a significant traffic impact.

Table 4.11-47
Operation Traffic – New Park on Wentworth

Proposed Use: Park	Daily Traffic	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
Trip Generation Rates (vehicle trips per acre)	9.32	2.41	71%	29%	2.09	35%	65%
Generated Traffic (3 Acres)	28	7	5	2	6	2	4

Stonehurst Park. As no additional recreational facilities are proposed at this site, there would be no site-generated traffic during operation other than minor maintenance-related traffic.

Stonehurst Elementary School. As no additional recreational facilities are proposed at this site, there would be no site-generated traffic during operation other than minor maintenance-related traffic.

Roscoe Elementary School. As no additional recreational facilities are proposed at this site, there would be no site-generated traffic during operation other than minor maintenance-related traffic.

Sheldon Pit. A 40-acre park is proposed for the Sheldon Pit site. The estimated volumes of traffic that would be generated on a typical day are shown in **Table 4.11-48**.

Table 4.11-48
Operation Traffic – Sheldon Pit

Proposed Use: Park	Daily Traffic	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
Trip Generation Rates (vehicle trips per acre)	9.32	2.41	71%	29%	2.09	35%	65%
Generated Traffic (40 Acres)	370	96	68	28	84	29	55

The impacts of the site-generated traffic on the study area roadways are summarized in **Table 4.11-49**. As shown, the project would result in a less than significant traffic impact.

Table 4.11-49
Operation Traffic Impacts - Streets in the Vicinity of Sheldon Pit

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Wentworth St (75%)						
Baseline Conditions	4	12,000	480e/690w	660e/340w	0.43-A	0.41-A
With Project Traffic		12,280	531e/711w	682e/381w	0.44-A	0.43-A
Sheldon St (75%)						
Baseline Conditions	4	16,000	650e/970w	930e/420w	0.61-B	0.58-A
With Project Traffic		16,280	701e/991w	952e/461w	0.62-B	0.60-B
Glenoaks Blvd (10%)						
Baseline Conditions	4	25,000	850n/1390s	1300n/1300s	0.87-D	0.81-D
With Project Traffic		25,090	853n/1397s	1303n/1306s	0.87-D	0.82-D

Cal Mat Pit. A 30-acre park is proposed for the Cal Mat Pit site. The estimated volumes of traffic that would be generated on a typical day are shown in **Table 4.11-50**.

Table 4.11-50
Operation Traffic – Cal Mat Pit

Proposed Use: Park	Daily Traffic	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
Trip Generation Rates (vehicle trips per acre)	9.32	2.41	71%	29%	2.09	35%	65%
Generated Traffic (30 Acres)	280	72	51	21	63	22	41

The impacts of the site-generated traffic on the study area roadways are summarized in **Table 4.11-51**. As shown, the project would result in a less than significant traffic impact.

Table 4.11-51
Operation Traffic Impacts - Streets in the Vicinity of Cal Mat Pit

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Stonehurst Ave (25%)						
Baseline Conditions	2	8,000	370n/510s	530n/400s	0.64-B	0.66-B
With Project Traffic		8,070	383n/515s	536n/410s	0.64-B	0.67-B
Peoria St (50%)						
Baseline Conditions	2	7,000	340e/390w	400e/320w	0.49-A	0.50-A
With Project Traffic		7,140	366e/401w	411e/341w	0.50-A	0.51-A
Sunland Blvd (25%)						
Baseline Conditions	4	16,000	590n/820s	850n/480s	0.51-A	0.53-A
With Project Traffic		16,070	595n/833s	856n/490s	0.52-A	0.54-A
Glenoaks Blvd (25%)						
Baseline Conditions	4	22,000	750n/1300s	1110n/950s	0.81-D	0.69-B
With Project Traffic		22,070	755n/1313s	1120n/956s	0.82-D	0.70-C

Strathern Pit. A park of up to 19 acres is proposed for the Strathern Pit site. The estimated volumes of traffic that would be generated on a typical day are shown in **Table 4.11-52**.

Table 4.11-52
Operation Traffic – Strathern Pit

Proposed Use: Park	Daily Traffic	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
Trip Generation Rates (vehicle trips per acre)	9.32	2.41	71%	29%	2.09	35%	65%
Generated Traffic (19 Acres)	180	46	33	13	40	14	26

The impacts of the site-generated traffic on the study area roadways are summarized in **Table 4.11-53**. As shown, the project would result in a less than significant traffic impact.

Table 4.11-53
Operation Traffic Impacts - Streets in the Vicinity of Strathern Pit

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Strathern St (40%)						
Baseline Conditions	2	13,000	450e/480w	570e/590w	0.60-B	0.74-C
With Project Traffic		13,070	463e/485w	576e/600w	0.61-B	0.75-C
Tujunga Ave (10%)						
Baseline Conditions	2	16,000	740n/770s	820n/640s	0.96-E	1.03-F
With Project Traffic		16,020	743n/771s	821n/643s	0.96-E	1.03-F
Fair Ave (30%)						
Baseline Conditions	2	3,200	140n/170s	200n/140s	0.21-A	0.25-A
With Project Traffic		3,250	150n/174s	204n/148s	0.22-A	0.26-A
Vineland Ave (10%)						
Baseline Conditions	4	34,000	900n/1470s	1330n/1610s	0.92-E	1.01-F
With Project Traffic		34,020	903n/1471s	1331n/1613s	0.92-E	1.01-F
Sunland Blvd (10%)						
Baseline Conditions	4	33,000	930n/1380s	1310n/1550s	0.86-D	0.97-E
With Project Traffic		33,020	933n/1381s	1311n/1553s	0.86-D	0.97-E

Parking Lot on Sherman. As no recreational facilities are proposed at this site, there would be no site-generated traffic during operation other than minor maintenance-related traffic.

Power Line Easement. A park of up to 16 acres is proposed for the Power Line Easement site. The estimated volumes of traffic that would be generated on a typical day are shown in **Table 4.11-54**.

Table 4.11-54
Operation Traffic – Power Line Easement

Proposed Use: Park	Daily Traffic	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
Trip Generation Rates (vehicle trips per acre)	9.32	2.41	71%	29%	2.09	35%	65%
Generated Traffic (16 Acres)	150	39	28	11	34	12	22

The impacts of the site-generated traffic on the study area roadways are summarized in **Table 4.11-55**. As shown, the project would result in a less than significant traffic impact.

Table 4.11-55
Operation Traffic Impacts - Streets in the Vicinity of the Power Line Easement

Street/ Location	No. of Lanes	Daily Traffic Volume	Peak Hour Traffic		V/C Ratio & LOS	
			AM	PM	AM Peak	PM Peak
Oxnard St (20%)						
Baseline Conditions	4	11,000	260e/800w	1270e/870w	0.50-A	0.79-C
With Project Traffic		11,030	266e/802w	1272e/874w	0.50-A	0.79-C
Burbank Blvd (10%)						
Baseline Conditions	2	28,000	870e/1020w	930e/1180w	1.28-F	1.48-F
With Project Traffic		28,020	873e/1021w	931e/1182w	1.28-F	1.48-F
Vineland Ave (10%)						
Baseline Conditions	4	29,000	880n/1490s	1250n/1300s	0.93-E	0.81-D
With Project Traffic		29,020	883n/1491s	1251n/1302s	0.93-E	0.81-D
Cahuenga Blvd (10%)						
Baseline Conditions	2	14,000	460n/580s	780n/390s	0.73-C	0.98-E
With Project Traffic		14,020	463n/581s	781n/392s	0.73-C	0.98-E
Clybourn Ave (10%)						
Baseline Conditions	2	6,500	290n/290s	290n/290s	0.36-A	0.36-A
With Project Traffic		6,520	293n/291s	291n/292s	0.37-A	0.37-A

Storm Drains. As no recreational facilities are proposed for this component, there would be no additional traffic during operation other than minor maintenance-related traffic.

Onsite BMPs. As no additional recreational facilities are proposed for this component, there would be no site-generated traffic during operation other than minor maintenance-related traffic.

4.11.6 Mitigation Measures

The following mitigation measure will be implemented to mitigate the significant impacts associated with construction traffic at all project components except Onsite BMPs and Tree Planting & Mulching. The implementation of the mitigation measures would reduce the project's traffic/transportation impacts to a less than significant level.

T-1 A construction traffic management plan shall be developed for each project site that will include but not be limited to such measures as designated haul routes for construction-related traffic (e.g., construction equipment, pickup and dump trucks, and other material delivery trucks), travel time restrictions for construction-related traffic to avoid weekday peak periods on selected roadways, designated site access locations, driveway turning restrictions, temporary traffic controls and/or flaggers, and designated parking/staging locations for workers and equipment.

The following measures will be implemented to mitigate the significant impacts associated with construction activities in the right-of-way of public streets for pipelines, catch basins, culverts, etc. The implementation of the following mitigation measures would reduce the project's traffic/transportation impacts to a less than significant level.

T-2 A construction area traffic control plan and/or detour plan shall be prepared for each location where construction activities would encroach into the right-of-way of a public roadway. The plan would include, but not be limited to such features as warning signs, lights, barricades, cones, lane closures, and restricted hours during which lane closures would not be allowed; e.g., 6:00 to 9:00 a.m. and 3:00 to 6:00 p.m., or as directed by the affected public agency (City of Los Angeles Department of Transportation for most locations).

T-3 Provide advance notification to affected property owners, businesses, residents, etc. of possible driveway blockages or other access obstructions and implement alternate access and parking provisions where necessary.

T-4 Provide alternative pedestrian and bicycle access/circulation routes where existing facilities such as sidewalks, crosswalks, and bike lanes would be obstructed.

T-5 Coordinate with emergency service providers (police, fire, and ambulance/paramedic agencies) prior to construction to provide information regarding lane closures, construction schedules, driveway blockages, etc. and to develop a plan to maintain or accommodate essential emergency access routes; e.g., plating over excavations, use of detours, etc.

T-6 Coordinate with public transit agencies (e.g., MTA) to provide information regarding lane closures, bus stop disruptions, etc. and to designate alternate pick-up/drop-off locations if appropriate.

T-7 As necessary, obtain a transportation permit from Caltrans for transportation of heavy construction equipment and/or materials which requires the use of oversized-transport vehicles on State highways.

4.11.7 Future Analyses

None required.

4.12 UTILITIES AND SERVICE SYSTEMS

4.12.1 Existing Setting

Water. The City of Los Angeles Department of Water and Power (LADWP) is the water provider for the project area. LADWP-owned water lines are located within street rights-of-way throughout the project area. In addition, the Metropolitan Water District of Southern California (Metropolitan) East Valley Feeder water line extends in a northwest-southeast direction through the watershed. The 48-inch pipeline extends north along San Fernando Road, briefly extends west along Interstate 5 and then continues northward along Haddon Avenue.

Sewer and Wastewater Treatment Systems. Sewer service is provided by the City of Los Angeles Department of Public Works. Sewer lines are located within street rights-of-way throughout the project area.

Electricity. LADWP also provides electric service to the area. A power line easement right-of-way is located in the center portion of Whitnall Highway at Cahuenga Boulevard and includes 230 kilovolt (kV) and 130 kV transmission lines and 3,400 volt and 500 volt lines on wooden poles. A transmission line extends north-south across San Fernando Road near the intersection with Wicks Street and proceeds northeast, crossing Glenoaks Boulevard. Southern California Edison has an easement which includes 66 to 69 kV lines extending across the project area at Cahuenga Boulevard and Edison Way (LACDPW, 1995).

Natural Gas. The Southern California Gas Company provides gas service to the project area. A medium pressure system is located within street rights-of-way throughout the project area (LACDPW, 1995).

Telephone and Cable. Telephone service is provided to the area by SBC. Underground and aboveground telephone lines are located throughout the project area. Sprint also has a telephone line parallel to San Fernando Road within the Metropolitan Transportation Authority's right-of-way. In addition, AT&T has a fiber optic cable within the Southern Pacific Railroad right-of-way where the railway crosses at Vineland Street (LACDPW, 1995). Cable television service is provided to the area by Comcast and Adelphia.

Oil. The Four Corners Pipe Line Company 14-inch pipeline extends along Glenoaks Boulevard from Tuxford Street. In addition, a Mobil Oil pipeline extends northeast along Tuxford Road to San Fernando Road where it extends to the northwest (LACDPW, 1995). Pacific Pipeline has constructed an oil pipeline along San Fernando Road (an easement running along Metrolink's Antelope Valley Line).

Rail Signal Cables. Southern California Regional Rail Authority (SCRRA) maintains railroad signal cables and conduits within its rail rights-of-way (e.g., Metrolink's Antelope Valley Line and Ventura County Line).

Solid Waste. The City of Los Angeles Department of Public Works collects the majority of residential rubbish from single-family residences and some of the smaller multi-family residences; private collectors collect a small portion. Most commercial developments are served by private collectors and a small portion by the Bureau of Sanitation.

The California Integrated Waste Management Act of 1989 and its subsequent amendments required all California cities and counties to implement programs (by the year 2000) that would reduce, recycle, or compost at least 50 percent of the quantity of wastes produced. The California Integrated Waste Management Board is the state entity that administers the act.

Several privately-owned landfills that accept inert waste are available within the project area for construction waste disposal. The locations and daily tonnage of waste accepted are summarized in **Table 4.12-1**. Other landfills located within Los Angeles County include Sunshine Canyon (14747 San Fernando Road, Sylmar), Chiquita Canyon (29201 Henry Mayo Drive, Newhall), Lancaster (600 E. Avenue F, Lancaster) and Antelope Valley (1200 West City Ranch Road, Palmdale). Sanitation Districts of Los Angeles County owns and operates several landfills in the Los Angeles Region (Calabasas, Puente Hills, and Scholl Canyon Landfills). However, these landfills are prohibited by various municipal ordinances from accepting waste from most areas within the City of Los Angeles, including the project area.

Table 4.12-1
Landfills within the Project Area

Facility Name	Address	Permitted Tonnage[1]	Estimated Closure Date[2]
Bradley Landfill	9081 Tujunga Ave. Sun Valley	10,000 tons/day	1/1/2007
Strathern Inert Landfill	8230 Tujunga Ave. Sun Valley	2,700 tons/day	4/5/2021
Calmat Inert Landfill	9436 Glenoaks Blvd. Sun Valley	500 tons/day	1/1/2026

Source: 1 City of Los Angeles, 2003.
2 California Integrated Waste Management Board, 2003.

4.12.2 Significance Criteria

Project impacts related to utilities would be considered significant if the project:

- Interfered with existing utility infrastructure in a manner which would result in interruption of service for extended periods
- Generated demand for utilities which exceeds the capacity of the providers
- Was not served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs

4.12.3 Impacts

4.12.3.1 Construction Impacts

Interference with Existing Underground Utilities. As described in **Section 4.12.1** above, various utility lines are located within existing street rights-of-way in the project area. Project components that would involve excavation within street rights-of-way include Storm Drains (all alternatives), Street Storage (all alternatives), and Strathern Pit (stormwater reuse pipeline to Vulcan Gravel Processing Plant [Alternative 3] or pipeline to Tujunga Spreading Grounds [Alternative 1, 2, and 4]). Utilities that may be affected by construction of these project components include water, sewer, electricity, gas, oil, telephone, cable, and railroad signal cables or conduits within SCRRA rail rights-of-way. Preliminary evaluation has indicated that sewer lines may need to be relocated for construction of proposed storm drains (LACDPW, 1995).

If affected utilities in the project area are not identified prior to construction, damage and temporary disruption to those lines and associated services could occur. Damage to major utility lines could result in significant impacts on the service area. Coordination and notification with utility service providers, as outlined in **Mitigation Measures U-1, U-2, and U-3**, would minimize interference with existing lines and interruption of service. With implementation of mitigation measures, construction impact on utilities would be less than significant.

Construction Waste Generation. Construction waste generated as a result of implementation of project components would primarily include soil, asphalt, concrete, and rock. For many sites, e.g., at the gravel pits, disturbed soils would be reused onsite, limiting the volume of material needing disposal at a landfill. Storm drains, Street Storage, and other components in paved areas could generate the greatest volumes of construction waste. Since implementation of various project components and associated construction waste generation would be phased over approximately 10 years and since onsite reuse/redistribution of soil would reduce the net amount of construction waste, the project would result in a less than significant impact on landfill capacity. **Mitigation Measure U-4** will be implemented to further reduce impacts on solid waste.

Modification of Solid Waste Collection Routes. During project construction within roadways, some roadway lane closures may be required. Project components that may require lane or road closures include Storm Drains, Street Storage, and Strathern Pit (stormwater reuse pipeline to Vulcan Gravel Processing Plant [Alternative 3] or pipeline to Tujunga Spreading Grounds [Alternative 1, 2, and 4]). During construction of these project components, temporary modifications to the existing solid waste collection routes may be required. Temporary changes to the collection routes would be a less-than-significant impact. **Mitigation Measure U-5** is proposed to further reduce project-related impacts on solid waste collection.

4.12.3.2 Operational Impacts

Sewer and Wastewater Treatment Systems. Stormwater runoff collected for the project would be infiltrated into the ground for groundwater recharge or reused for non-potable purposes at local facilities. Proposed reuses of stormwater include landscape irrigation and gravel washing, which would not require any new connections to the existing sewer system. The project would only require minimal, if any, connection to the sewer system at park buildings (e.g., a recreation center), if any are constructed as part of project components such as Sheldon Pit, Strathern Pit, or Cal Mat Pit. Therefore, operation of the project would have no impact on existing sewer or wastewater treatment systems.

Water Supply Systems. The proposed project includes landscaping and tree planting throughout the project area. Stormwater collected and treated by various project components would be used to supply the water necessary to irrigate these new landscaped areas and trees to the extent feasible. The project would require minimal, if any, connection to the potable water system as a backup to the stormwater reuse irrigation system or for park building (e.g., a recreation center), if any are constructed as part of project components such as Sheldon Pit, Strathern Pit, or Cal Mat Pit. Therefore, the project would not require new or expanded water supply sources or entitlements.

Water conservation is one of the objectives of the proposed project. The project would capture substantial amounts of stormwater runoff, which would be used to augment the local water supply. Proposed uses of captured stormwater include groundwater recharge and replacement of existing uses that do not require potable water (i.e., landscape irrigation and gravel processing). **Table 4.12-1** summarizes the amounts of water that would be conserved through proposed infiltration and reuse of stormwater during an year with average rainfall. Alternatives 1, 3, and 4 would conserve approximately 2,000 acre-feet of water per year. Alternative 2 would result in conservation of over 8,000 acre-feet per year. Implementation of any of the four alternatives would result in substantial water conservation for the City of Los Angeles. Therefore, operation of the project would have a beneficial impact on existing water supply.

Table 4.12-2
Average Annual Water Conservation by Alternative
(acre-feet)

Alternative	Amount Infiltrated	Amount Reused	Total Conserved
1	2,042	82	2,124
2	8,021	102	8,123
3	1,418	706	2,124
4	2,054	70	2,124

Electricity Consumption. Operation of the proposed project would require electricity for operation of pumps as described below:

- **Valley Steam Plant.** Two 35,000-gpm pumps would be required to transport stormwater from the retention basins to the onsite storage tanks. These pumps would be operated only during large storms when the inflow to the retention basins exceed their capacities. (All alternatives)
- **Vulcan Gravel Processing Plant.** One 10-hp pump would be required to transport stormwater from the retention basins to the onsite storage tank for later reuse. The pump would be operated only after storms. (All alternatives)

- **Strathern Pit.** One 150-hp pump would be required to transport the collected stormwater to either Tujunga Spreading Grounds (Alternative 1, 2, and 4) or Vulcan Gravel Processing Plant (Alternative 3). One 1-hp pump would be used to continuously circulate stormwater through the wetlands.
- **Sheldon Pit.** One 1-hp pump would be used to continuously circulate stormwater through the wetlands. (Alternative 2)

In addition, minor pumps would be required at various project components to operate the irrigation systems designed to utilize stormwater collected onsite.

Operation of these pumps would result in a minor increase in the demand for electricity. The project could also result in a minor increase in electricity demand from operation of park buildings (e.g., a recreation center), if any are constructed as part of project components such as Sheldon Pit, Strathern Pit, or Cal Mat Pit. However, the minor increases in demand from the project would not exceed the existing capacity of LADWP. Therefore, this impact is less than significant.

Operational Impact on Power Line Towers. The Valley Steam Plant (all alternatives) and Power Line Easement (all alternatives) components of the proposed project involve construction of stormwater infiltration facilities near power line towers. If stormwater infiltration saturates the soil surrounding the towers and affects the stability of the power line towers, it could result in a significant impact on the electricity infrastructure. **Mitigation Measure U-6** would reduce this impact to a less-than-significant level.

Solid Waste Generation during Project Operation. Solid waste generated during operation of the project would be limited to sediments removed periodically from the stormwater collection facilities during maintenance. Sediments would be disposed of in compliance with applicable regulations at approved sites. In addition, the project could generate minor amounts of solid waste from operation of parks and park buildings (e.g., a recreation center), if any are constructed as part of project components such as Sheldon Pit, Strathern Pit, or Cal Mat Pit. However, the minor increases in demand from the project would not exceed the existing capacity of area landfills. The proposed project includes the Mulching component, a voluntary program for recycling green waste into mulch. Participating residences and businesses in the project area would use the services of certified landscapers and gardeners, who would process green waste into mulch and reuse it for landscaping onsite. The mulching program would reduce the amount of solid waste stream going to landfills. The overall impact of project operation on the city's solid waste collection and disposal system would range from beneficial (if high participation in the mulching program) to less than significant (assuming no or low participation in the mulching program).

4.12.3.3 Impact by Alternative

As described above, adverse project-related impacts on utilities are related primarily to construction activities. Therefore, the theoretical worst-case alternative for utilities is defined as the alternative that would involve the maximum amount of construction, i.e. all proposed project components.

Interference with Existing Underground Utilities. Under all project alternatives, construction-related impacts on underground utilities from excavation of street rights-of-way would be potentially significant without mitigation. The theoretical worst-case alternative would have the greatest construction impact on underground utilities since it would require the most extensive excavation of street rights-of-way. Among the four County-defined alternatives, Alternative 3 would have more construction impacts because it involves the most extensive Street Storage project component (i.e., the length of roadways affected would be three to twelve times greater than the other alternatives) and would therefore require more substantial excavation within street rights-of-way. Alternatives 1, 2, and 4 would involve similar and less extensive excavation within street rights-of-way, and would therefore have less impact on existing underground utilities.

Construction Waste Generation. Under all project alternatives, construction-related impacts on regional landfill capacity would be less than significant. The theoretical worst-case alternative would generate the greatest amount of construction waste. Among the four County-defined alternatives, Alternative 3 would generate the most construction waste as compared with Alternatives 1, 2, or 4, since it includes the most extensive disturbance of existing roadways (Street Storage and Storm Drains).

Modification of Solid Waste Collection Routes. Under all project alternatives, construction-related impacts on solid waste collection due to possible road/lane closures would be less than significant. The theoretical worst-case alternative would have the greatest impact on solid waste collection since it would require the most extensive road/lane closures. Among the four County-defined alternatives, Alternative 3 would have more construction impacts because it involves the most extensive Street Storage project component (i.e., the length of roadways affected would be three to twelve times greater than the other alternatives) and would therefore require more substantial road/lane closures. Alternatives 1, 2, and 4 would involve similar and less extensive road/lane closures.

Sewer and Wastewater Treatment Systems. Under all project alternatives, the project would have no operational impact on sewer and wastewater treatment systems.

Water Supply Systems. Under all project alternatives, operation of the project would have a beneficial impact on water supply. Among the four County-defined alternatives, Alternative 2 would have the greatest beneficial impact since it would result in conservation of approximately four times as much stormwater as Alternatives 1, 3, or 4.

Electricity Consumption. Under all project alternatives, operation of the project would have a less-than-significant impact on electricity consumption. The theoretical worst-case alternative and Alternative 2 would have slightly higher electricity consumption than the other three alternatives due to the inclusion of Sheldon Pit.

Operational Impact on Power Line Towers. Under all project alternatives, project-related impact on power line towers would be potentially significant without mitigation. The design of the Valley Steam Plant component would be the same in all four alternatives. The Power Line

Easement component is included in all four alternatives. However, the lengths of the easement involved differ by alternative (1.1 mile, 0.5 mile, 0.9 mile, and 0.8 mile for Alternatives 1, 2, 3, and 4, respectively). Therefore, Alternatives 1, 3, and 4 and the theoretical worst-case alternative would have a slightly higher level of impact than Alternative 2.

Solid Waste Generation during Project Operation. Under all project alternatives, operation of the project would have a less-than-significant impact related to solid waste due to disposal of sediments removed from the stormwater collection facilities during maintenance. The theoretical worst-case alternative would have the greatest impact since a larger amount of sediments would need to be removed. Among the four County-defined alternatives, Alternative 1, 2, and 3 would require more sediment removal than Alternative 4, since Alternative 4 has a smaller total stormwater collection capacity than the other three alternatives.

4.12.4 Mitigation Measures

Construction Impact on Underground Utilities.

U-1 During the preliminary design phase of each project component, the utility service providers will be consulted to identify existing and proposed buried facilities in affected roadways and to determine which utilities require relocation and which can be avoided. If relocation is required, the appropriate utility service provider will be consulted to sequence construction activities to avoid or minimize interruptions in service.

U-2 If utility service disruption is necessary, residents and businesses in the project area will be notified a minimum of two to four days prior to service disruption through local newspapers, direct mailings to affected parties, or public posting of notices.

U-3 The contractor will be required to excavate around utilities, including hand excavation as necessary, to avoid damage and to minimize interference with safe operation and use. Hand tools must be used to expose the exact location of buried gas or electric utilities.

Construction Waste Disposal.

U-4 The plans and specifications for the proposed project will state that the construction contractor is required to identify and implement programs for minimizing solid waste generated during construction. These programs will include, at a minimum, recycling of asphalt and concrete paving materials, and balance of graded soil on site to the maximum extent feasible.

Construction Impact on Solid Waste Collection Routes.

U-5 Prior to construction, the City of Los Angeles Bureau of Sanitation will be notified of the construction schedule and planned lane or road closures so that solid waste collection routes and access in the area may be modified accordingly.

Operational Impact on Power Line Towers.

U-6 During preliminary design of Valley Steam Plant and Power Line Easement, a geotechnical investigation will be conducted to assess the characteristics and stability of the soil around the power line towers. If results of the investigation indicate that stormwater infiltration may saturate the soil and affect the stability of the towers, the following changes would be incorporated into the site design:

- For the Valley Steam Plant component, the proposed retention basins would be sited to avoid the towers, if possible, or a series of drywells would be constructed so that water would be infiltrated deeper into the ground to avoid saturation of surface soils.
- For the Power Line Easement component, a series of drywells would be constructed so that water would be infiltrated deeper into the ground to avoid saturation of surface soils.
- Alternatively, for either the Power Line Easement or Valley Steam Plant components, a liner may be installed along the sideslope of the basin closest to the power line towers to prevent infiltration. (The liner would cover only a small portion of the infiltration basin.)

4.12.5 Future Analyses

As described in Mitigation Measure U-6 above, additional geotechnical investigation of the power line area will be required.

Section 5
Cumulative Impacts

5.1 CEQA REQUIREMENTS FOR CUMULATIVE IMPACT ANALYSIS

CEQA requires an evaluation of the cumulative impacts of related projects in an EIR (CEQA Guidelines Section 15130). Section 15130(b) identifies two approaches for evaluating cumulative impacts: the "list approach" and the "planning scenario approach." The list approach uses "a list of past, present, and reasonably anticipated probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency." The planning scenario approach utilizes "a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency." This Program EIR uses the "list approach."

The cumulative impact analysis must also include probable future activities of a project or associated with the project. These activities might be implemented subsequent to the proposed project. An EIR must include an analysis of the environmental effects of these future activities if:

1. they are a reasonably foreseeable consequence of the initial project; and
2. the future action will be significant in that it will likely change the scope or nature of the initial project or its environmental effects.

[Note, **Section 4** of this Program EIR presents the environmental effects of the future activities associated with implementation of the Watershed Management Plan. Components are anticipated to be implemented over approximately 10 years.]

Based on State CEQA Guidelines Appendix G, the proposed project would have significant impacts if it had impacts that were individually limited but "cumulatively considerable." Cumulatively considerable means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects and the effects of probable future projects.

The discussion of each related project consists of a description of the project and its potential environmental impacts that relate to the proposed project. The cumulative effects of all related projects with the proposed project are then discussed at the end of this section.

5.2 RELATED PROJECTS

LACDPW, with Stakeholder input, has identified the following regionally significant projects to be related to the proposed Watershed Management Plan:

- Sun Valley Park Multiuse Pilot Demonstration Project
- Valley Steam Plant Combined-Cycle Generating Facility Installation
- San Fernando Valley Superfund Site Remediation and Monitoring
- Tujunga Spreading Grounds Methane Gas Migration Pilot Study
- Bradley Landfill and Recycling Center Transition Master Plan
- Future construction projects within the project area

5.2.1 Sun Valley Park Multiuse Pilot Demonstration Project

Sun Valley Park and Recreation Center is an existing City of Los Angeles park located on Vineland Avenue between Cantara Street and Lorne Street. The Sun Valley Park Multiuse Pilot Demonstration Project (Sun Valley Park Project) is proposed by LACDPW as a pilot project to demonstrate the effectiveness of non-traditional stormwater management techniques used throughout the Sun Valley Watershed Management Plan. The Sun Valley Park Project will use a portion of the park to capture, treat, and infiltrate stormwater collected from approximately 20 acres of the park area and 25 acres of residential and commercial land near the park. Stormwater runoff will be directed into the park using a system of storm drains and catch basins in the surrounding streets. The water will then be carried to underground treatment units to remove sediments, oil and grease, and heavy metals. The treated stormwater will then be conveyed to two underground infiltration basins.

Since the entire system is underground, the existing baseball diamond, basketball courts, and swimming pool will be preserved. Construction of the project is expected to begin in early 2004, prior to implementation of any of the Watershed Management Plan components detailed in this Program EIR. The project will provide an opportunity for simultaneous improvements to the park, which may include a soccer/football field, restored walkway, refurbished baseball field, and native plantings. A water quality monitoring system will be installed to monitor the pollutant removal efficiency of stormwater treatment methods and effects on groundwater water quality associated with stormwater infiltration. Specifically, vadose zone monitoring of soil water (via porous suction cup samplers) at six locations and groundwater monitoring wells at three locations (one upgradient, two downgradient) are proposed. Sampling for total petroleum hydrocarbons (TPH) diesel, TPH gasoline, and metals is currently proposed.

LACDPW determined that implementation of the Sun Valley Park project would have less than significant impacts on the environment. For many topics, project-related impacts will be beneficial. A CEQA Notice of Exemption was prepared and filed for the project in 2003. The cumulative environmental effects of Sun Valley Park along with the rest of the Watershed Management Plan components are essentially the same as the impacts described for the proposed project (see **Section 4**).

5.2.2 Valley Steam Plant Combined-Cycle Generating Facility Installation

LADWP is currently constructing a new combined cycle generating facility (CCGF) at the Valley Steam Plant. The CCGF project will help LADWP comply with RECLAIM, a regulatory program designed and adopted by SCAQMD to reduce NO_x and sulfur dioxide emissions in the South Coast Air Basin. The CCGF will replace four existing utility boilers with two combustion turbine generators, a new steam turbine generator, two heat recovery steam generators and associated selective catalytic reduction systems, cooling towers, and ancillary equipment. Two new 20,000-gallon aboveground storage tanks (ASTs) will be constructed to increase the ammonia storage capacity at the facility. In addition, an existing fuel oil AST will be converted to diesel service (SCAQMD, 2002a). As of August 2003, construction is approximately 80 percent complete (M. Acevedo, pers. comm., 2003). Construction is expected to continue through April, 2004 and be completed prior to construction of any of the Watershed Management Plan components detailed in this Program EIR.

The Final EIR prepared for the Valley Steam Plant project (January 2002) by the SCAQMD indicates that the project is expected to have significant adverse impacts (after mitigation) related to construction air emissions; operations emissions of CO and PM10; hazards from catastrophic failure of storage tanks, tank cars, and increased use of hazardous materials; and increased traffic during construction. Cumulatively significant impacts were identified for construction air emissions, operations air emissions, and traffic during construction. The proposed Watershed Management Plan was not listed as a related project in the Valley Steam Plant Final EIR (SCAQMD, 2002a).

5.2.3 San Fernando Valley Superfund Site Remediation and Monitoring

The southern portion of the project area in the eastern San Fernando Basin (SFB) overlaps with existing volatile organic compound (VOC) groundwater contaminant plumes, which were first discovered in the early 1980s. Concentrations of chlorinated VOCs, trichloroethylene (TCE) and perchloroethylene (PCE), were found to be above federal and state drinking water quality standards (Maximum Contaminant Levels or MCLs) in many city production wells located in the eastern part of the SFB (EPA, 2000).

In 1986, the San Fernando Valley was listed on the National Priorities List (NPL) under the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund. NPL is a list of sites with known releases or threatened releases of contaminants that have been determined to warrant further investigation by EPA. Since the late 1980s, EPA, in cooperation with state and local agencies, has been conducting clean-up by pumping groundwater from a series of wells and treating the water to remove the VOCs. The project area is located within the North Hollywood and Burbank Operable Units (OUs). An OU is a focused study area established to facilitate the clean-up efforts. Under EPA oversight, public supply wells located within the North Hollywood and Burbank OUs are operated by LADWP and the City of Burbank Water and Power, respectively. Water from these wells is treated (via aeration and granular activated carbon (GAC) filters) and/or blended with higher quality water before entering public water supply distribution systems (EPA, 2000).

Since 1992, EPA has conducted a Basinwide Monitoring Program, which consists of quarterly sampling of groundwater wells located throughout the eastern portion of the SFB (EPA, 2002a). During the monitoring program for 2001, TCE and PCE were detected in over 85 percent of the 63 wells sampled, with 23 (TCE) and 17 (PCE) of the wells exceeding the state MCL (EPA, 2003d). Since 1999, EPA has also included the following constituents in the sampling program to determine if they are of concern in the SFB and whether clean-up action is required: hexavalent chromium, methyl tertiary butyl ether (MTBE), semi-volatile organic compounds (SVOCs), and perchlorate (EPA, 2003d).

Operations-related impacts from the groundwater clean-up efforts include air emissions of VOCs for the aeration towers – these are controlled by a vapor phase GAC system. Additionally, the carbon used in the various GAC systems requires periodic replacement and then disposal or regeneration. Emissions of VOCs from the Watershed Management Plan relate only to limited vehicle tailpipe emissions (primarily during construction with some minor vehicle use during operation).

5.2.4 Tujunga Spreading Grounds Methane Gas Migration Pilot Study

In recent years, the use of the Tujunga Spreading Grounds has been limited due to methane gas migration from the adjacent historical landfill (Sheldon/Arleta Landfill) (ULARA Watermaster, 2002). When large amounts of water are infiltrated at the Tujunga Spreading Grounds, this results in the release of methane on the eastern side of the landfill. Currently, the spreading grounds are operated at up to 50 cubic feet per second (cfs), which is approximately 20 percent of their maximum capacity. LADWP has been conducting a pilot study to continue limited spreading while operating a gas collection system. Recent results of the pilot study showed that no gas migration occurred when the spreading grounds are operated at up to 100 cfs. It is anticipated that the operation will increase gradually over the next several years until the full capacity of the spreading grounds is reached, as long as the methane migration can be contained (M. Mackwoski, pers. comm., 2003).

As part of detailed design for the Strathern Pit component, LACDPW will coordinate with City of Los Angeles Bureau of Sanitation, LADWP, and the ULARA Watermaster's office to evaluate the feasibility of using the Tujunga Spreading Grounds for stormwater infiltration. The evaluation will determine the amount of stormwater that can be infiltrated by the proposed project without adverse effects on landfill methane migration. Since the proposed project will be coordinated with the gas migration study, and since other releases of methane in the area that could relate to operation of the Watershed Management Plan are not known, there are no cumulative impacts with this related project.

5.2.5 Bradley Landfill and Recycling Center Transition Master Plan

Bradley Landfill and Recycling Center (Bradley Landfill) is a Class III municipal solid waste disposal and recycling facility located within the project area. The 209-acre site is located at 9227 Tujunga Avenue, Sun Valley, and is bounded approximately by Glenoaks Boulevard, Sheldon Street, San Fernando Road, and Tujunga Avenue. Project components located in the vicinity include Sheldon Pit and Cal Mat Pit to the north and northeast, Valley Steam Plant to the northwest, and Vulcan Gravel Processing Plant and Tuxford Green to the south. Bradley Landfill does not accept hazardous, radioactive, or untreated medical waste.

The Bradley Landfill and Recycling Center Transition Master Plan is a long-range plan that is divided into two phases. In the first phase of the plan, the maximum permitted height of the landfill will be expanded by 43 feet (from 1,010 to 1,053 feet above mean sea level) to provide additional disposal capacity of 4.7 million cubic yards within the boundaries of the existing landfill. This expansion will allow the landfill to operate until the established closure date of April 14, 2007. The second phase will consist of constructing and operating a 6,000 ton-per-day transfer station and 1,000 ton-per-day Materials Recovery Facility that will be located adjacent to the existing landfill. The purpose of this plan is to provide for an orderly transition of Bradley Landfill from an active landfill to a transfer station/Materials Recovery Facility.

A Notice of Preparation for an Environmental Impact Report for the Bradley Landfill and Recycling Center Transition Master Plan was published in April 2003 (SCH No. 2002121027). The lead agency for the Master Plan is the City of Los Angeles Planning Department. As indicated in the NOP, project issues to be addressed in the EIR are air quality, forest land/fire hazard, water quality, land use, noise, and traffic/circulation.

5.2.6 Future Construction Projects Within the Project Area

Construction projects of various types, not currently identifiable, will continue in the project area over the next 10 years (the projected implementation schedule of the Watershed Management Plan). Depending on the timing and description of these projects, cumulative impacts with the proposed project related to construction (air quality, noise, and traffic) are possible. Development projects within the watershed that increased impervious area might also alter stormwater drainage patterns.

5.3 CUMULATIVE IMPACT ANALYSIS

Upon review of the proposed project and identified related projects, the following are the topics with potential cumulative impacts.

5.3.1 Air Quality

Operations-related emissions from the Sun Valley Park project (which are negligible), Valley Steam Plant (significant for CO and PM10), Superfund Remediation (VOCs, but mitigated), Sheldon/Arleta Landfill (methane), and Bradley Landfill (PM10 from earthwork and equipment tailpipe emissions) would occur at the same time as construction and operation of Watershed Management Plan project components. Since operation of at least one of these related projects (Valley Steam Plant) would result in significant air emissions, and since project-related emissions during construction for several components (see **Table 4.1-5**) are projected to exceed SCAQMD NOx thresholds, the air quality impacts of construction of the proposed project components with operation of the related projects would be cumulatively significant. Air quality emissions could be further increased by other, currently unidentified, construction projects that could be concurrent with construction of Watershed Management Plan components.

Mitigation has been identified in **Section 4.1** to reduce project-related air emissions to the extent feasible. Mitigation for air quality impacts is also being implemented or planned for other related projects.

5.3.2 Geology and Soils

Operation of the related projects (and possibly construction at Bradley landfill) could potentially increase soil erosion by wind or water. For the Watershed Management Plan, mitigation has been identified in **Sections 4.1 and 4.7** to reduce construction-related soil erosion and dust generation to the extent feasible. Related projects (especially large-scale operations such as Bradley Landfill) would also implement mitigation to minimize soil erosion. At any one time, the area subject to soil erosion from these projects is expected to be small compared to the total study area, which is urban and primarily paved or sodded. Therefore, the cumulative effect on geology and soils is not considered to be significant.

5.3.3 Hydrology – Water Quality

Related projects with the potential to adversely affect groundwater quality include Sun Valley Park and Bradley Landfill Master Plan. The San Fernando Valley Superfund Remediation project is an on-going effort to clean-up existing groundwater contamination.

Sun Valley Park pilot project will collect water from approximately 45 acres of park and residential/commercial land and infiltrate the runoff into the groundwater basin. The impact of the proposed Watershed Management Plan (including infiltration included in the Sun Valley Park project) on groundwater quality is predicted to be less than significant. However, the vadose zone and groundwater monitoring program conducted for Sun Valley Park will reveal whether any water quality issues arise from infiltration of Sun Valley stormwater into the groundwater basin, and whether any additional measures would be required to prevent adverse effects.

Design of the Bradley Landfill transfer station and materials recovery facility is anticipated to include measures necessary to protect groundwater from leachate or on-site stormwater runoff. No cumulative adverse impacts to groundwater with the Watershed Management Plan components are anticipated. Inundation of the existing landfilled materials by raising of the groundwater table related to infiltration proposed by the Watershed Management Plan is not predicted (see **Section 4.7.6.3.3**).

Cumulative impacts on groundwater quality could potentially occur from recharging stormwater into a groundwater basin with an ongoing VOC remediation (San Fernando Valley Superfund Site). The importance of the project's potential cumulative impacts with the Superfund cleanup efforts was recognized early in the project analysis, and was evaluated based on a groundwater modeling conducted by LADWP (see **Section 4.7.6.3.3**). The model predicted that no significant effects would occur on the existing VOC plume.

5.3.4 Noise

Substantial noise generation associated with the proposed Watershed Management Plan is related to construction equipment and vehicles. Noise from construction of project components could be cumulative with noise from operation of the Valley Steam Plant and construction or operation of Bradley Landfill. The other known related projects, such as operation of Sun Valley Park, Superfund remediation efforts and the methane gas pilot study, have negligible noise generation.

Noise generation related to project construction at Valley Steam Plant is predicted to be less than significant (see **Section 4.8.4**). Since this project site is located in a primarily industrial and commercial area (adjacent to Hansen Spreading Grounds, Bradley Landfill, and Sheldon Pit) cumulative noise impacts of project construction and plant operation are also anticipated to be less than significant.

Watershed Management Plan components to be constructed near Bradley Landfill include Valley Steam Plant, Cal Mat Pit, and storm drains. Noise generation related to project construction at Valley Steam Plant is predicted to be less than significant (see **Section 4.8.4**). However, construction of storm drains in roads and construction of stormwater facilities at Cal Mat Pit may be significant even with implementation of feasible mitigation measures. Additional noise from construction (if concurrent) or operation of Bradley Landfill would further elevate area noise levels. The cumulative impact is potentially significant.

Operation of the Watershed Management Plan components will have minimal noise generation related to pump operation (pumps will be enclosed at Strathern Pit and Sheldon Pit), maintenance vehicles and equipment, and visitors to the proposed parks. Cumulative noise impacts of operation of the proposed project with operation of the related projects are considered to be less than significant.

5.3.5 Recreation

The proposed Watershed Management Plan components detailed in this Program EIR and the Sun Valley Park project would have a cumulatively beneficial impact on recreation in the project area. The acreage of recreational facilities in Sun Valley will be expanded and existing facilities will be enhanced. Adverse impacts from the related projects and the Watershed Management Plan relate only to localized and temporary access restrictions, possible if construction periods are concurrent. The cumulative effect would be less than significant.

5.3.6 Traffic and Transportation

With incorporation of mitigation measures, the proposed project is expected to have less than significant impacts on traffic during the construction period (**Section 4.11**). The only known related project that may have concurrent construction impacts is conversion of Bradley Landfill to a transfer station and Materials Recovery Facility. Landfill activities may occur concurrently with installation of storm drains in streets near the landfill. Storm drains are linear construction zones, which are expected to progress at an average rate of 200 to 500 feet per day. Under typical conditions, any particular location would be directly impacted by the construction activities for a duration of one to five days. The traffic management plans to be prepared for each project component will consider on-going construction and operational activities in the immediate area (such as construction at Bradley Landfill). The cumulative impact on traffic and transportation is anticipated to be less than significant.

Section 6
Additional CEQA Analysis

This section contains additional environmental analyses required in the State CEQA Guidelines for environmental impact reports.

6.1 SIGNIFICANT UNAVOIDABLE IMPACTS

An EIR must address any significant effect on the environment that cannot be avoided if the project is implemented (Public Resources Code Section 21100(b)(2)(B)).

6.1.1 Air Quality

Construction Impacts. As identified in Section 4.1, impacts to air quality from construction of the proposed project are significant and would likely still exceed significance thresholds established by the SCAQMD even with implementation of feasible mitigation measures. These construction effects will be temporary and the true magnitude of the emissions will depend on the contractor and equipment choices made for the each component. Project phasing will also influence the total emissions at any given time from project construction – if more than one element is constructed at the same time, overall project-related emissions would be additive for the length of the overlap in construction schedules. Mitigation measures A-1 through A-14 have been identified to reduce construction-related emissions to the extent feasible.

Operational Impacts. Operation of the proposed project would result in minor, less than significant impacts on air quality and in beneficial impacts related to tree planting and mulching.

6.1.2 Biological Resources

Section 4.2 discusses the potential significant adverse impacts on biological resources that may be present on project sites that could not be surveyed (gravel pits). If threatened or endangered plant or animal species are present on the unsurveyed project sites (or New Park on Wentworth where a focused survey is recommended), disturbance to these species from project construction could be deemed significant even if authorized by the relevant wildlife agencies. Significant unavoidable impacts to biological resources are therefore possible, but not expected, and will be fully evaluated in subsequent analyses (see Section 4.2.8). If sensitive resources are found, project re-design to avoid and protect the sensitive species will be the first consideration. However, depending on the location of sensitive resources at the sites, if any, project redesign that avoids the biological resources while still meeting the flood control objective of the project component may be infeasible.

6.2 SIGNIFICANT, IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA Guidelines (Sections 15126 and 15127) require that an EIR identify any significant irreversible changes that would result from project implementation. Section 15126.2(c) of CEQA Guidelines provides guidance as to what sorts of changes might be considered irreversible. Such changes include commitment of nonrenewable resources to uses that future generations will probably be unable to reverse and environmental accidents that could occur as a result of the project.

No significant, irreversible impacts have been identified for the project. Construction of the project components and, to a lesser extent project maintenance, would result in the consumption of nonrenewable vehicle and equipment fuels. However, the volume of this fuel use is considered limited and less than significant. Additionally, mitigation measure A-14 (Section 4.1) will be considered by the County during the implementation of components with more extensive construction. This measure calls for the use of alternative fuel vehicles and equipment to the extent feasible and would reduce the unavoidable consumption of traditional fossil fuels from implementation of the project.

6.3 IMPACTS FOUND TO BE LESS THAN SIGNIFICANT

Table 6-1 summarizes potential environmental impacts of the proposed project found to be less than significant, as well as beneficial impacts and impacts mitigated to levels of less than significant, as required by Public Resources Code section 21100(c).

Table 6-1
Summary of Less than Significant Impacts

Topic	Beneficial Impact	Less than Significant Impact: No Mitigation Proposed	Less than Significant Impact: Mitigation Identified to Further Reduce Adverse Effects	Potentially Significant Impact but Mitigation Identified to Reduce Impacts Below a Level of Significance	Reference
Aesthetics	X	X			Appendix B (Initial Environmental Study)
Agricultural Resources		X			Appendix B
Air Quality*	X	X	X		Section 4.1
Biological Resources*	X		X		Section 4.2
Cultural Resources		X		X	Section 4.3
Geology and Soils		X		X	Section 4.4
Hazards and Hazardous Materials			X	X	Section 4.5
Hydrology – Drainage and Flooding	X	X			Section 4.6
Hydrology – Water Quality	X	X	X	X	Section 4.7
Land Use		X			Appendix B and Section 6.5
Mineral Resources		X			Appendix B and Section 7.8
Noise		X		X	Section 4.8
Population and Housing		X			Appendix B
Public Services		X		X	Section 4.9
Recreation	X	X			Section 4.10
Traffic and Transportation		X		X	Section 4.11
Utilities		X		X	Section 4.12

* See also Section 6.1, above.

6.4 GROWTH INDUCING IMPACT

Section 15126.2(d) of the CEQA Guidelines states that an EIR should discuss "…the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." Growth can be induced in a number of ways, including through the elimination of obstacles to growth, or through the stimulation of economic activity within the region.

The proposed project does not involve construction of new homes or businesses and does not include construction of new, potentially growth-inducing, infrastructure such as roads or potable water or wastewater systems. However, the project does include infiltration of stormwater, which will increase the volume of available groundwater. Since no new potable water treatment or distribution systems are proposed, this element of the project is not considered growth inducing. The proposed project would provide flood control benefits to areas that have already been developed with residential, commercial, and industrial uses. Therefore, it would not result in the elimination of obstacles to growth. No growth inducing impacts would occur.

6.5 CONSISTENCY WITH LOCAL AND AREAWIDE PLANNING

CEQA Guidelines Section 15125(d) requires that EIRs discuss any inconsistencies between the proposed project and applicable general plans and regional plans.

6.5.1 City of Los Angeles General Plan

The project area for the Watershed Management Plan is within the City of Los Angeles. The City of Los Angeles General Plan is the primary document containing goals and policies for implementing the development and conservation proposals of the City of Los Angeles. The General Plan consists of 10 city-wide elements and the land use element for each of the city's 35 Community Planning Areas. The project area encompasses two Community Planning Areas – Sun Valley-La Tuna Canyon and North Hollywood.

Table 6-2 summarizes City of Los Angeles General Plan Land Use Element policies potentially relevant to the Watershed Management Plan. Project consistency with each of these policies is discussed.

Table 6-2
Project Consistency with City of Los Angeles General Plan Policies

No.	Policy	Consistency with Sun Valley Watershed Management Plan
Sun Valley – La Tuna Canyon Community Plan[1]		
3-1.4	The utilization of sand and gravel areas shall be conducted in such a way as to conserve sand and gravel resources for future availability and use, minimize the impact of extractive activities upon residential and commercial areas, and provide for the reclamation and reuse of exhausted pits. ***Program:*** Where located near to residential areas, consideration should be given to setting aside portions of reclaimed sites for open space or recreational uses. ***Program:*** Consideration should be given to the future potential use of the Department of Water and Power Valley Steam Plant site as a sand and gravel extraction site.	The project would result in reclamation of one or more gravel pits (Cal Mat Pit, Sheldon Pit, and/or Strathern Pit) for open space and recreational uses. Valley Steam Plant is currently in the process of being converted to a natural gas facility which will extend the site life of the facility. The proposed project component at this location would occur on <10 acres of an approximately 155-acre site. Implementation of this component would therefore not preclude the future potential use of the Valley Steam Plant as a sand and gravel extraction site.
4-3.1	Develop new neighborhood and community parks to help offset the Community Plan areas parkland deficiency for its current population and its projected year 2010 population. ***Program:*** Work with the Recreation and Parks Department in setting aside portions of reclaimed sand and gravel mining sites for open space or recreational uses (see Policy 3-1.4).	The project would increase park land by designing some of the stormwater management facilities to also serve as public parks. The proposed park sites include reclaimed gravel pits.
North Hollywood Community Plan[2]		
p. III-1	The Plan encourages the preservation of low density single-family residential areas, the conservation of open space lands and the concentration of commercial and residential development into the North Hollywood Center (business district and environs); these are intended to be connected to other major Centers of the City by a rapid transit network. The Plan stresses the need for the improvement of existing public facilities and the provision of additional facilities to satisfy the needs of both the present and projected populations.	The project would contribute to preservation and enhancement of open space lands by converting a power line easement into park space. The project would provide additional public facilities, including stormwater management facilities and parks.
p. III-6	The Plan urges the continued improvement of park and recreational facilities so as to maximize their utility. It also proposes utilization of flood control and power line right- of-ways for open space purposes and/or hiking and bicycle trail where appropriate.	The Power Line Easement component of the project would utilize power line right-of-way for open space and recreation purposes.

Sources: 1 City of Los Angeles, 1999.
2 City of Los Angeles, 1996.

6.5.2 City of Los Angeles Zoning Code

6.5.2.1 Consistency with Zoning Designations

Table 6-3 presents the existing zoning designations of the proposed project sites. Under some components of the Watershed Management Plan, privately-owned parcels will be acquired and developed, which will result in land use changes. Some of the project components involve conversion of existing land uses to public parks. Others involve construction of subsurface structures or require only minor modifications in site topography, and would not alter the existing land uses.

Public park is a permitted use in the following zones (citations in parentheses indicate the section numbers of the City of Los Angeles Municipal Code): A1 (Sec. 12.05 A4), RA (Sec. 12.07 A4), M2 (Sec. 12.19 A1), M3, (Sec. 12.20 A1), and OS (Sec. 12.04.05 B1(a)(i)). Public utilities and public services uses and structures are permitted uses in the following zones: A, R, C and MR (Sec. 14.00 A6). (Definitions for the zone codes are provided in the footnotes to Table 6-2.)

For the majority of the project components, existing land use and zoning designations are consistent with the proposed uses under the Watershed Management Plan. For two components, Power Line Easement and Strathern Pit, the proposed use is not specifically permitted for the zoning designations present on these sites. Based on preliminary consultations with the City of Los Angeles Department of Building and Safety, it appears that land use approvals (Conditional Use Permit (CUP) or zoning variance) could be required for project implementation at these two sites (B. Quan, pers. comm., 2003).

6.5.2.2 Zoning Supplemental Use District "G" (Surface Mining Districts)

Cal Mat Pit, Sheldon Pit, and Strathern Pit components are located within Zoning Supplemental Use District "G" (Surface Mining Districts), as established by Section 13.03 of the Los Angeles Municipal Code. Surface Mining Districts were created to establish safeguards and controls for production of minerals and to provide for the reclamation of mined lands. Under the California Surface Mining and Reclamation Act (SMARA), all surface mining operations which disturb more than 1 acre or remove more than 1,000 cubic yards of material are required to have an approved reclamation plan. The City of Los Angeles Department of City Planning, as the SMARA lead agency for the project area and in accordance with Section 13.03E and F of the Los Angeles Municipal Code, reviews applications for mining permits and reclamation plans (or amendments thereto). The City Planning Commission has the authority to approve new or amended reclamation plans. The California Department of Conservation Office of Mine Reclamation (OMR) and the State Mining and Geology Board (SMGB) assist local lead agencies in review and enforcement of SMARA.

Approved reclamation plans for Cal Mat Pit (Conrock and California Portland Cement, 1977) and Sheldon Pit (Cal Mat Company, 1990) are on file at the Department of City Planning. Strathern Pit is not listed in OMR's AB3098 List, which is a quarterly revised list of mines regulated under SMARA with an approved or pending reclamation plan (OMR, 2003), and no reclamation plan for Strathern Pit is on file at the Department of City Planning (R. Giron, pers.

comm., October 2003) or at the California Department of Conservation, OMR (J. Fernandez and A. Yhnell, pers. comm., 2003).

The reclamation plan for Sheldon Pit presents two options for interim uses: a disposal site for sand and debris collected behind Hansen Dam and/or by debris dams, or an inert landfill. With respect to the final use of the site, the plan states that the following are potential appropriate uses: regional park and recreation facilities, golf course, outdoor storage facilities, or any other open space uses. It should be noted that the reclamation plan for Sheldon Pit is described as a conceptual plan that does not provide authority to undertake any reclamation activity.

The reclamation plan for Cal Mat Pit states that the potential uses of the site include open space, industrial/commercial, or recreational uses. Currently, Cal Mat Pit is operated by Vulcan Materials Company as an inert landfill under a solid waste facilities permit from the City of Los Angeles (originally issued by Department of Public Works, now administered by the Department of Environmental Affairs) (M. Rosen, pers. comm., 2003).

The existing reclamation plans for Cal Mat Pit and Sheldon Pit both consider recreation and other open space uses as alternative final land uses. Therefore, the facilities proposed for these two sites under the Watershed Management Plan (parks with stormwater retention basins) would not conflict with the existing reclamation plans. However, if the Department of City Planning, as lead agency for SMARA, determines that the use of Cal Mat Pit or Sheldon Pit as proposed under the Watershed Management Plan is a “substantial deviation” from the existing reclamation plans, an amendment to the existing reclamation plans could be required (State Mining and Geology Board’s Reclamation Regulations, CCR Section 3502(d)).

Table 6-3
Zoning Designations and Existing and Proposed Land Uses of Project Components

Project Component	Existing Use	Land Use Proposed by Project	General Land Use Designation	Zoning Designation*	Consistency with Zoning
Cal Mat Pit	Gravel pit (inactive)	Public Park	Open Space and Very Low Residential	A1 and RA	Consistent
Parking Lot on Sherman	Commercial buildings	No change in aboveground land use	Light Manufacturing	M2	Consistent
Power Line Easement	LADWP power line right-of-way	Add parks and/or landscaped areas in open spaces between power line towers	Public Facilities	PF	May require CUP or zoning variance
Roscoe Elementary School	LAUSD school	No change in aboveground land use	Public Facilities	PF	Consistent
Sheldon Pit	Gravel pit (inactive); Used for disposal of gravel washwater	Public Park	Open Space	A1	Consistent
Stonehurst Elementary School	LAUSD school	No change in aboveground land use	Public Facilities	PF	Consistent
Stonehurst Park	Community park	No change in aboveground land use	Open Space	OS	Consistent
Strathern Pit	Gravel pit (inactive); Landfill for inert waste (active)	Public Park	Light Manufacturing	M2, M3, and P	May require CUP or zoning variance
Sun Valley Middle School	LAUSD school	No change in aboveground land use	Public Facilities	PF	Consistent
Tuxford Green	Vacant	Landscaped area / garden	Public Facilities	PF	Consistent
New Park on Wentworth	Vacant	Public Park	Very Low Residential	RA	Consistent
Valley Steam Plant	LADWP power plant	No change in primary land use	Public Facilities	PF	Consistent
Vulcan Gravel Processing Plant	Gravel processing facility	No change in primary land use	Heavy Manufacturing	M3	Consistent

CUP: Conditional Use Permit
* Zoning Designations

A1:	Agricultural	M3:	Heavy Industrial	P:	Automobile Parking
M2:	Light Industrial	OS:	Open Space	PF:	Public Facilities
				RA:	Suburban

6.5.3 SCAG Regional Comprehensive Plan and Guide

The Southern California Association of Governments (SCAG) is the metropolitan planning organization for six southern California counties: Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. SCAG is mandated by both the federal and state governments to plan for transportation, growth management, hazardous waste management, and air quality throughout the region. As part of its mandate, SCAG develops demographic projections of each city and unincorporated community within its planning area. The Regional Comprehensive Plan and Guide (RCPG), published by SCAG, is intended to serve the region as a framework for decision-making with respect to the growth and changes that can be anticipated during the next 20 years and beyond (SCAG, 1996).

Table 6-4 summarizes RCPG policies potentially relevant to the Watershed Management Plan. As an environmentally beneficial project, the Watershed Management Plan is considered to be consistent or neutral with regard to RCPG policies.

Table 6-4
Project Consistency with SCAG Regional Comprehensive Plan and Guide Policies

No.	Policy	Consistency with Sun Valley Watershed Management Plan
Growth Management Chapter of Regional Comprehensive Plan and Guide		
3.03	The timing, financing, and location of public facilities, utility systems, and transportation systems shall be used by SCAG to implement the region's growth policies.	Phasing and implementation of the public facilities proposed under the project are discussed in **Section 3**. Since the project is not growth inducing (see **Section 6.3**), it will not conflict with growth policies for the region. Construction and operation of the project will provide a limited number of jobs but will not impact housing.
3.05	Encourage patterns of urban development and land use that reduce costs on infrastructure construction and make better use of existing facilities.	The project involves construction of facilities to reduce flood hazards in an existing urban area. Existing facilities such as schools, a power line easement, and gravel pits are proposed for use as stormwater management facilities.
3.09	Support local jurisdictions' efforts to minimize the cost of infrastructure and public service delivery, and efforts to seek new sources of funding for development and the provision of services.	The project is a multi-purpose flood control program intended to attract multiple funding partners. Project elements such as park creation, habitat enhancements, water conservation, and air quality improvements are expected to attract new sources of funding for stormwater management facilities.
3.10	Support local jurisdictions' actions to minimize red tape and expedite the permitting process to maintain economic vitality and competitiveness.	The project has been developed in cooperation with and input from the Stakeholders, whose members includes local jurisdictions. Agency participation and consultation during the project development process is expected to expedite the permitting process for the proposed project.
3.18	Encourage planned development in locations least likely to cause adverse environmental impact.	The project includes development of public facilities, including stormwater management facilities, parks, and open space. The project is designed to minimize adverse environmental impacts. Mitigation measures are proposed to minimize adverse impacts where feasible. The proposed project does not involve development of residential, commercial, or industrial facilities.
3.19	Support policies and actions that preserve open space areas identified in local, state, and federal plans.	The Watershed Management Plan includes two components currently zoned as Open Space, Stonehurst Park and Sun Valley Park. The proposed stormwater management facilities at these sites (and other project component areas) are consistent with the maintenance of open space areas. In addition, the proposed project will be creating additional open space areas (e.g., proposed parks at Sheldon Pit, Strathern Pit, and Cal Mat Pit).
3.20	Support the protection of vital resources such as wetlands, groundwater recharge areas, woodlands, production lands and lands containing unique and endangered plants and animals.	Consistent with this policy, the project includes the creation of new stormwater infiltration facilities and wetlands. However, the presence of rare plant or animal species cannot be excluded from several of the project components (gravel pits and New Park on Wentworth). Prior to construction of any project-related facilities at these locations, appropriate surveys will be conducted. If necessary, mitigation measures will be identified to protect sensitive biological resources.

Table 6-4 (Continued)
Project Consistency with SCAG Regional Comprehensive Plan and Guide Policies

No.	Policy	Consistency with Sun Valley Watershed Management Plan
3.21	Encourage the implementation of measures aimed at the preservation and protection of recorded and unrecorded cultural resources and archaeological sites.	Site-specific surveys for cultural resources have been conducted for the majority of the project components. For several project sites (Cal Mat Pit, Sheldon Pit, and Strathern Pit), surveys for cultural resources could not be conducted during preparation of the Program EIR. Appropriate cultural resources surveys will therefore be conducted as part of future analyses necessary prior to implementation of these project components. Mitigation measures to protect cultural resources will be implemented. (See **Section 4.3**)
3.22	Discourage development, or encourage the use of special design requirements, in areas with steep slopes, high fire, flood, and seismic hazards.	The project is designed to reduce flood hazards in the area. Some of the project components involve use of gravel pits with steep side-slopes. Project facilities will be appropriately designed to reduce hazards related to slope instability. The proposed project does not include construction of any habitable structures.
3.23	Encourage mitigation measures that reduce noise in certain locations, measures aimed at preservation of biological and ecological resources, measures that would reduce exposure to seismic hazards, minimize earthquake damage, and to develop emergency response and recovery plans.	Program-level and site-specific mitigation measures for these resource topics have been identified in the Program EIR (see **Sections 4.4 and 4.8**). Additional site-specific mitigation measures will be developed in second tier environmental documents as necessary.
3.27	Support local jurisdictions and other service providers in their efforts to develop sustainable communities and provide, equally to all members of society, accessible and effective services such as: public education, housing, health care, social services, recreational facilities, law enforcement, and fire protection.	The project has been developed in cooperation with and input from the Stakeholders, whose members includes local jurisdictions and service providers. The project proposes to provide flood protection services and recreational facilities in an underserved community (see **Section 4.10.1** regarding the existing level of recreational opportunities in the community planning area).
Regional Transportation Plan Policies		
4.02	Transportation investments shall mitigate environmental impacts to an acceptable level.	The proposed project does not involve transportation investments.
4.04	Transportation Control Measures shall be a priority.	Project construction would result in temporary traffic impacts. Mitigation measures are identified in **Section 4.11** to minimize these effects.
4.16	Maintaining and operating the existing transportation system will be a priority over expanding capacity.	The proposed project does not expand the capacity of transportation systems.

Table 6-4 (Continued)
Project Consistency with SCAG Regional Comprehensive Plan and Guide Policies

No.	Policy	Consistency with Sun Valley Watershed Management Plan
Air Quality Chapter Core Actions		
5.07	Determine specific programs and associated actions needed (e.g., indirect source rules, enhanced use of telecommunications, provision of community based shuttle services, provision of demand management based programs, or vehicle-miles-traveled/emission fees) so that options to command and control regulations can be assessed.	Project-related impacts on air quality and transportation would be mostly limited to short-term construction impacts. Air quality is discussed in **Section 4.1** and Transportation is discussed in **Section 4.11**. Mitigation measures are identified in both section in order to reduce project-related effects. Project consistency with existing and zoned land use is summarized in **Section 6.4.3**.
5.11	Through the environmental document review process, ensure that plans at all levels of government (regional, air basin, county, sub-regional and local) consider air quality, land use, transportation and economic relationships to ensure consistency and minimize conflicts.	
Open Space Chapter Ancillary Goals		
9.01	Provide adequate land resources to meet the outdoor recreation needs of the present and future residents in the region and to promote tourism in the region.	The proposed project would conserve and create open space by converting exhausted gravel pits, a power line easement, and two undeveloped parcels into public parks and open spaces.
9.02	Increase the accessibility to open space lands for outdoor recreation.	
9.03	Promote self-sustaining regional recreation resources and facilities.	
9.04	Maintain open space for adequate protection of lives and properties against natural and man-made hazards.	
9.05	Minimize potentially hazardous developments in hillsides, canyons, areas susceptible to flooding, earthquakes, wildfire and other known hazards, and areas with limited access for emergency equipment.	The project is designed to reduce flood hazards in the area. Some of the project components involve use of gravel pits with steep side-slopes. Project facilities will be appropriately designed to reduce hazards related to slope instability. The proposed project does not include construction of any habitable structures.
9.06	Minimize public expenditure for infrastructure and facilities to support urban type uses in areas where public health and safety could not be guaranteed.	The project involves construction of facilities to reduce flood hazards in an existing urban area.
9.08	Develop well-managed viable ecosystems or known habitats of rare, threatened and endangered species, including wetlands.	The project includes development of wetlands at Sheldon and Strathern gravel pits and other opportunities for enhancement of wildlife habitat areas (other gravel pits and New Park on Wentworth).

Table 6-4 (Continued)
Project Consistency with SCAG Regional Comprehensive Plan and Guide Policies

No.	Policy	Consistency with Sun Valley Watershed Management Plan
Water Quality Chapter Recommendations and Policy Options		
11.02	Encourage "watershed management" programs and strategies, recognizing the primary role of government in such efforts.	The project is a watershed management program proposed by Los Angeles County Department of Public Works for the Sun Valley Watershed.
11.03	Coordinate watershed management planning at the sub-regional level by: (1) providing consistent regional data; (2) serving as a liaison between affected local, state, and federal watershed management agencies; and (3) ensuring that watershed planning is consistent with other planning objectives (e.g., transportation, air quality, and water supply).	The project has been developed in cooperation with and input from the Stakeholders, whose members includes federal, state, and local agencies related to watershed and water resources management.
11.05	Support regional efforts to identify and cooperatively plan for wetlands to facilitate both sustaining the amount and quality of wetlands in the region and expediting the process for obtaining wetlands permits.	The project includes development of wetlands at Sheldon and Strathern gravel pits and other opportunities for enhancement of wildlife habitat areas (other gravel pits and New Park on Wentworth).
11.06	Clean up the contamination in the region's major groundwater aquifers since its water supply is critical to the long-term economic and environmental health of the region. The financing of such clean-ups should leverage state and federal resources and minimize significant impacts on the local economy.	The project area overlays the eastern portion of the San Fernando groundwater basin, a basin with existing contamination from the solvents PCE and TCE. The Watershed Management Plan does not assist in the clean up of this Superfund site. However, groundwater infiltration associated with the proposed project is also not expected to substantially alter groundwater volumes or flow that would exacerbate the existing groundwater contamination problem (see **Section 4.7**).
11.07	Encourage water reclamation throughout the region where it is cost-effective, feasible, and appropriate to reduce reliance on imported water and wastewater discharges. Current administrative impediments to increase use of wastewater should be addressed.	The proposed project includes reuse of stormwater for irrigation and gravel washing (Vulcan Gravel Processing Plant) to replace use by potable water. Irrigation reuse will be for public spaces as well as on individual residences and business properties (reuse of water collected in backyard cisterns). Additionally, implementation of the Watershed Management Plan will increase local groundwater supply by infiltrating stormwater in stormwater management facilities and/or local spreading grounds.

Source of Policies: SCAG, 1996 and SCAG comment letter on the NOP dated December 5, 2002 (see **Appendix B**).

Section 7
Alternatives

7.1 CEQA REQUIREMENTS FOR CONSIDERATION OF ALTERNATIVES

CEQA requires that an EIR consider a reasonable range of alternatives to a proposed project that can attain most of the basic project objectives, but has the potential to reduce or eliminate significant adverse impacts of the proposed project and may be feasibly accomplished in a successful manner, considering the economic, environmental, social and technological factors involved. An EIR must evaluate the comparative merits of the alternatives (CEQA Guidelines Sections 15126.6(a), (d) and (e)). If certain alternatives are found to be infeasible, the analysis must explain the reasons and facts supporting that conclusion. Section 15126.6(d) also requires that, if an alternative would cause one or more significant effects in addition to those caused by the proposed project, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed. One of the alternatives analyzed must be the “No Project” alternative (CEQA Guidelines Section 15126.6(e)). The EIR must also identify alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and should briefly explain the reasons underlying the lead agency's determination (CEQA Guidelines Section 15126.6(c)).

7.2 ALTERNATIVES EVALUATED IN EQUAL LEVEL OF DETAIL

Based on the project objectives, LACDPW has developed the following four alternatives of the Sun Valley Watershed Management Plan:

- Alternative 1 – Infiltration
- Alternative 2 – Water Conservation
- Alternative 3 – Stormwater Reuse
- Alternative 4 – Urban Storm Protection

The description of each alternative is presented in **Section 3.5**. The development process of the four alternatives is summarized in **Section 3.5.1**, and discussed in detail in the Sun Valley Watershed Management Plan and Technical Memoranda Nos. 1, 3, 4, and 5 (see **Section 2.9** for availability of related documents). The environmental impact analyses of the four County-defined alternatives as well as the theoretical worst-case alternative are presented in **Sections 4.1 through 4.12**.

7.3 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

During the alternatives development process (summarized in **Section 3.5.1**), the following project components were initially considered but eliminated from further consideration:

- Burbank Airport Retention Basin
- Non-Potable Water Distribution System
- San Fernando/Tuxford – Cal Mat Pit Tunnel
- Vineland Avenue Pump Station and Force Main

These project components are summarized below and described in further detail in Technical Memorandum No. 4.

Burbank Airport Retention Basin. The project site consists of a 37-acre parcel located at the west end of Burbank-Glendale-Pasadena Airport. The site is bounded by Vineland Avenue, Tujunga Avenue, the Metrolink railroad, and a commercial compound. The area is mostly undeveloped, but contains runway approach lights and airport communications devices. The project site was considered for installation of underground vaults and infiltration systems to store and infiltrate stormwater. This project component was determined to be infeasible since the site is within the Airport's Runway Protection Zone, and construction in this area could reduce the effectiveness of this zone which serves to mitigate the effects of aircraft overshoot and undershoot of the runway.

Non-Potable Water Distribution System. One of the project components evaluated during the initial stages was an extensive, watershed-wide non-potable water distribution system to reuse some of the collected stormwater. An inventory of potential non-potable water users throughout the watershed was compiled and their average annual demands were estimated. Based on this inventory, it was determined that Vulcan Gravel Processing Plant accounts for more than 80 percent of the potential non-potable water use in the project area. A watershed-wide distribution system was found to be inefficient due to the length of pipeline necessary to deliver water to a large number of small users. Therefore, the more extensive distribution system proposed in the initial stages was replaced by the stormwater reuse line from Strathern Pit to Vulcan Gravel Processing Plant (proposed in Alternative 3).

San Fernando/Tuxford – Cal Mat Pit Tunnel. A tunnel from the intersection of San Fernando Road and Tuxford Street to Cal Mat Pit was proposed. The tunnel would collect runoff reaching the San Fernando-Tuxford intersection and convey it by gravity to Cal Mat Pit for infiltration or reuse. It would consist of 8,800 feet of an 8-foot or 12-foot diameter storm drain to be constructed at an average depth of 55 feet and a maximum depth of 90 feet. While the tunnel would contribute to alleviating flooding at the San Fernando-Tuxford intersection, it was determined to be infeasible due to the technological constraints and costs involved in the construction of the tunnel.

Vineland Avenue Pump Station and Force Main. This project component consisted of a pump station, located at the lower end of the watershed, and a pipeline along Vineland Avenue to collect and convey runoff from the lower watershed to Strathern Pit. The runoff transported to Strathern Pit would be infiltrated or reused. The pump station was proposed to be constructed on the Burbank-Glendale-Pasadena Airport property near the intersection of Vineland Avenue and the Metrolink railroad. The proposed capacity of the pump station ranged between 450 and 900 cfs (14,000 to 26,000 hp). The pipeline dimensions would be 8,300 feet in length and 6 to 7 feet in diameter. This project component was determined to be infeasible due to the costs involved in the construction of the pump station and force main.

7.4 ALTERNATIVES EVALUATED IN THIS SECTION

This section evaluates the environmental effects of project alternatives that are in addition to the four County-defined alternatives of the Watershed Management Plan.

These additional alternatives include the following:

- No Project Alternative
- 9250 Project Alternative
- Boulevard Pit Alternative (Substitution for Sheldon Pit)

The description and analysis of environmental impacts for each of the above alternatives are presented below.

7.5 PROJECT OBJECTIVES

As presented in **Section 2,** the primary objective of the project is to reduce local flooding in the project area. Secondary objectives of the project are: increase water conservation, increase recreational opportunities, increase wildlife habitat, improve water quality, provide additional environmental benefits, and increase multiple agency participation.

7.6 NO PROJECT ALTERNATIVE

7.6.1 Description

The No Project alternative under CEQA represents what is reasonably expected to occur in the future given well-defined trends and other parameters, such as adopted or on-going plans and programs (e.g., general plans and population projections), in the absence of the proposed project.

Nine of the seventeen proposed project components involve use of publicly owned properties with existing facilities (schools, parks, street rights-of-way, and other city properties). Under the No Project alternative, these sites and facilities are expected to continue current usage and remain essentially the same as under existing conditions. Two project components (Onsite BMPs and Tree Planting & Mulching) are proposed as voluntary community involvement programs at existing residential, commercial, and industrial properties. Under the No project alternative, these properties are expected to continue current usage and remain essentially the same as under existing conditions.

Six project components involve use of privately held properties. **Table 7-1** describes the predicted future use of these sites, based on its current usage and City of Los Angeles zoning and general plan land use designations.

Table 7-1
Project Component Sites with Potential Future Changes in Land Use in the Absence of the Proposed Project

Project Component Site	Existing Use	Zoning Designation*	General Plan Land Use Designation	Possible Future Use in Absence of Proposed Project Based on Zoning and Land Use Designations
Cal Mat Pit	Idle	A1	Open Space	Inert landfill, then reclaimed as a park once landfill capacity is reached
New Park on Wentworth	Vacant	RA	Very Low Residential	Remains vacant or becomes developed with single-family residential units
Parking Lot on Sherman	Commercial and industrial facilities	M2	Light Manufacturing	Same as existing use
Sheldon Pit	Gravel wash water source and disposal	A1	Open Space	Same as existing use, then reclaimed as a park once local gravel resources are exhausted and Vulcan Gravel Processing Plant ceases its operation
Strathern Pit	Inert landfill	M2, M3, and P	Light and Limited Manufacturing	Same as existing use, then reclaimed as industrial facilities once landfill capacity is reached
Vulcan Gravel Processing Plant	Gravel Processing	M3	Heavy Manufacturing	Same as existing use, then converted to other industrial uses once local gravel resources are exhausted

* Zoning Designations

A1:	Agricultural	P:	Automobile Parking
M2:	Light Industrial	RA:	Suburban
M3:	Heavy Industrial		

7.6.2 Environmental Impacts

Under the No Project alternative, impacts related to construction of the proposed stormwater management facilities would not occur. Construction-related impacts on air quality, noise, and traffic could result from implementation of other projects on these sites but the level of these impacts is unknown. Depending on the extent of new development on these sites, if any, the significant construction-related impacts on air quality associated with the Watershed Management Plan could be avoided.

Under the No Project alternative, the Sun Valley area would continue to lack stormwater management facilities. Local flooding currently experienced within the watershed would not be remedied. Similarly, other benefits of the Watershed Management Plan (i.e., water conservation (from stormwater reuse/infiltration), improved surface water quality (from stormwater treatment), creation of wildlife habitat (from wetlands creation), air quality improvement (from tree planting), and energy conservation (from tree planting and mulching) would not result. Without the Watershed Management Plan, new recreational facilities might eventually be constructed at Cal Mat Pit and Sheldon Pit. However, the total increase in recreational resources would be larger under the Watershed Management Plan and would be implemented sooner.

Since the No Project alternative does not have the beneficial effects of the Watershed Management Plan or meet project objectives, it is rejected as environmentally inferior the proposed project.

7.7 PROJECT 9250 ALTERNATIVE

7.7.1 Description

In 1970, LACDPW proposed Project 9250, which consisted of a system of storm drains throughout the Sun Valley Watershed. A Draft EIR was prepared in 1995 (LACDPW, 1995) for the project. However, the project was never implemented primarily due to lack of funding and community support.

Project 9250 proposed approximately 10 miles of storm drains, including 7 miles of trunk drain and 3 miles of laterals. The alignment and lengths of the storm drains proposed under Project 9250 are similar to those proposed under the Watershed Management Plan. However, the dimensions of the pipes of the storm drains (width and depth) required by the proposed project would generally be smaller than that of Project 9250.

7.7.2 Environmental Impacts

The Draft EIR prepared for Project 9250 concluded that the proposal would have significant short-term environmental effects related to traffic and circulation, air quality, and emergency access (LACDPW, 1995). Therefore, the significant construction-related impacts on air quality associated with the Watershed Management Plan could not be avoided with implementation of the Project 9250 alternative.

Since Project 9250 would be constructed within existing streets, significant impacts on cultural and/or biological resources would not occur. Therefore, implementation of this alternative would avoid the impacts on these resources identified for the Watershed Management Plan (potential but unknown buried archaeological resources, potential historic machinery, refuse, or structures at Strathern Pit, Cal Mat Pit, and Sheldon Pit; potential but unknown sensitive biological resources at Cal Mat Pit, Sheldon Pit, Strathern Pit, Vulcan Gravel Processing Plant, and New Park on Wentworth). However, mitigation has been identified to reduce these impacts (Sections 4.2.7 and 4.3.4).

While the local flood control benefits achieved by Project 9250 would be similar to the proposed project, the majority of the other beneficial impacts related to the Watershed Management Plan would not occur. Construction of storm drains alone would not increase water conservation, improve surface water quality, add recreational facilities, improve wildlife habitat, conserve energy, or improve air quality. However, Project 9250 would increase flows carried by the Los Angeles River and thereby intensify flooding risk to downstream communities along the Los Angeles River corridor. It would also convey stormwater runoff directly to the River and eventually the Pacific Ocean without any treatment for water quality improvement. Since all stormwater from the project area does not currently reach the River or Ocean, implementation of Project 9250 would, to some degree, increase the overall pollutant load to these waterbodies.

Since the Project 9250 alternative does not avoid the significant air quality construction impact of the proposed project and since it does not meet all project objectives or provide as many environmental benefits as the Watershed Management Plan, it is rejected as environmentally inferior to the proposed project.

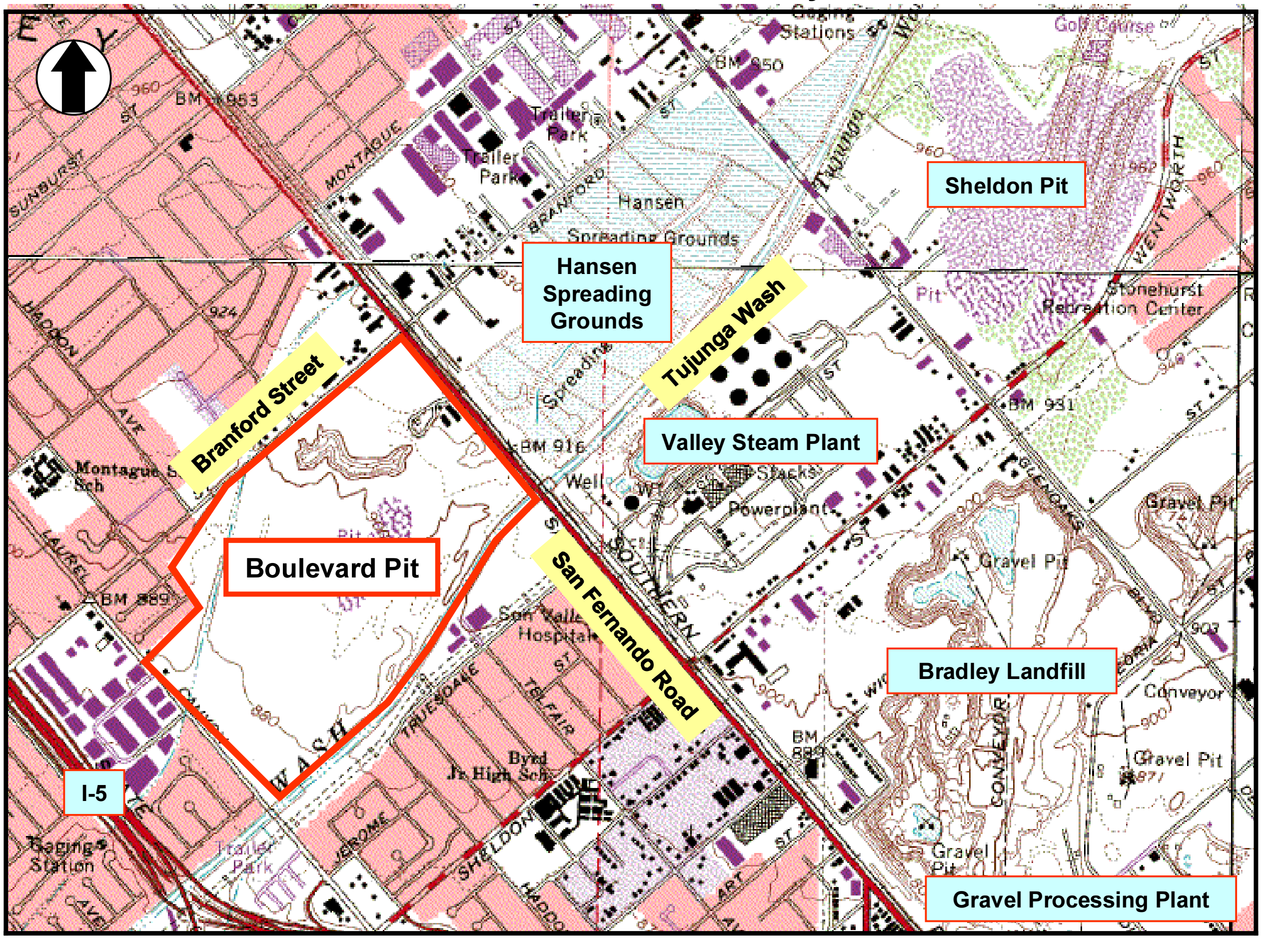
7.8 BOULEVARD PIT ALTERNATIVE

7.8.1 Description

This alternative involves substituting Boulevard Pit for one of the proposed project components – Sheldon Pit and Tujunga Wash Transfer – which is included in Alternative 2. Boulevard Pit is an actively mined gravel pit located just outside of Sun Valley Watershed, on the southern corner of San Fernando Road and Branford Street (see **Figure 7-1**). The pit is owned and operated by Vulcan Materials Company. The gravel extracted from Boulevard Pit is transported by a conveyer belt to the Vulcan Gravel Processing Plant for processing.

Boulevard Pit has been considered as an alternative to Sheldon Pit for capturing and infiltrating some of the storm flows from Tujunga Wash. Both facilities are located adjacent to Tujunga Wash. The two gravel pits are also comparable in size and therefore stormwater storage capacity.

Figure 7-1
Boulevard Pit and Vicinity



7.8.2 Environmental Impacts

Under the Boulevard Pit alternative, construction-related impacts (less than significant noise and traffic and significant air quality) would be expected to be similar to the impacts described for Sheldon Pit. Since permission to access the site was not received from the property owners, on-foot survey of Boulevard Pit for biological and cultural resources was not conducted. Therefore, this alternative would also require mitigation to reduce potential cultural resources impacts to a less than significant impact. As with the other gravel pit sites proposed under the Watershed Management Plan, impacts to sensitive biological resources are unknown but potentially significant even with implementation of feasible mitigation measures.

Gravel pits included in the Watershed Management Plan (Cal Mat Pit, Sheldon Pit, and Strathern Pit) are exhausted gravel pits where gravel extraction operations have ceased. However, under this alternative, conversion of the actively mined Boulevard Pit into a stormwater retention basin would interrupt the ongoing gravel extraction activities. This would be considered an adverse impact on the local availability of mineral resources.

Since Boulevard Pit is located outside of the watershed, it cannot be used to capture stormwater generated within Sun Valley Watershed via gravity. Therefore, unlike Sheldon Pit, it would not provide any local flood control benefits for the watershed. Assuming that Boulevard Pit would be designed similar to the Sheldon Pit component, other environmental benefits that are expected from the Sheldon Pit component would be similar. These benefits include water conservation from infiltration of Tujunga Wash flows, increase in recreational resources and wildlife habitat, and air quality improvements.

Since the Boulevard Pit alternative would not provide any local flood control benefits for the watershed and since it would have an adverse impact on the local availability of mineral resources, it is rejected as environmentally inferior to the proposed project.

7.9 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Significant impacts identified for the Watershed Management Plan include air pollutant emissions associated with construction of some project components. Of the County-identified alternatives (1 through 4), Alternative 2 has the worst construction-related air emissions (since the Sheldon Pit and Tujunga Wash Transfer component is included) and Alternative 1 is predicted to have the lowest levels of air pollutant emissions. This air quality impact would be avoided under No Project, but the No Project alternative is rejected as environmentally inferior since it would not address the existing flooding conditions in the watershed. Significant construction-related air emissions were also identified for the 9250 Project. Although the impact is significant under any of the County-defined Watershed Management Plan alternatives (or with the Boulevard Pit alternative), mitigation measures have been identified to reduce the impact to the extent feasible. As compared with the No Project, 9250 Project, and Boulevard Pit alternatives, the proposed Watershed Management Plan is considered the environmentally superior project. Comparison of the four County-defined alternatives is based on the environmental benefits of the project alternative as compared with project objectives (**Table 7-2**).

Table 7-2
Comparison of the Benefits of Project Alternatives

Project Objective	Alternatives Analysis
Reduce local flooding	Variable by component location but overall Alternatives 1, 2 and 3 are similar – Alternative 4 provides the least local flooding reduction.
Increase water conservation	Alternative 2 provides the greatest beneficial groundwater volume impact; Alternative 3 includes the largest amount of reuse (primarily washwater).
Increase recreational opportunities	Alternative 2 includes the greatest acreage (84) of new park facilities.
Increase wildlife habitat	Alternative 2 includes creation of wetlands at Sheldon Pit and Strathern Pit (with native vegetation restoration potential).
Improve water quality	Alternatives 1, 2, and 3 divert similar amounts of flow (and more than Alternative 4) from the Los Angeles River and provide stormwater runoff treatment.
Provide additional environmental benefits (air quality improvement and energy reduction)	Alternatives 1 and 3 include higher levels of participation in Tree Planting and Mulching (as compared with Alternatives 2 and 4).
Increase multiple agency participation	Provided under all alternatives.

Alternatives 1, 2 and 3 are similar in regard to the main project objective of reducing local flooding. However, based on the inclusion (and size) of project components with wetlands, parks, and groundwater infiltration, Alternative 2 is identified as the environmentally superior Watershed Management Plan alternative.

Since the Watershed Management Plan will be implemented over 10 years, a definitive listing of project components to be contained in the final Plan is not possible. This Program EIR considers the environmental impacts of each of the project components individually as well as the impacts of the four sample alternatives. The County intends to adopt all components of the Watershed Management Plan.

Appendix A
References, Acronyms and Abbreviations, Glossary, Preparers of the Program EIR, and Organizations and Persons Consulted

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A.2 ACRONYMS AND ABBREVIATIONS

AF	acre-feet
AOU	American Ornithologists' Union
AQMP	Air Quality Management Plan
BMPs	best management practices
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CIWMB	California Integrated Waste Management Board
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon Monoxide
CUP	Conditional Use Permit
dBA	decibels using "A" weighted sound level
DHS	California Department of Health Services
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
ft	feet
gpm	gallons per minute
hp	horsepower
IES	Initial Environmental Study
LACDPW	County of Los Angeles Department of Public Works
LADWP	City of Los Angeles Department of Water and Power
LAMC	Los Angeles Municipal Code
LARWQCB	Los Angeles Regional Water Quality Control Board
LAUSD	Los Angeles Unified School District
L_{eq}	Equivalent Noise Level
MBTA	Migratory Bird Treaty Act
MCL	Maximum Contaminant Level
msl	mean sea level
NAAQS	National Ambient Air Quality Standards
NO_2	Nitrogen Dioxide
NOP	Notice of Preparation

NPDES	National Pollutant Discharge Elimination System
OMR	California Department of Conservation Office of Mine Reclamation
Pb	lead
PCE	perchloroethylene
PEIR	Program Environmental Impact Report
PM10	Particulate Matter less than 10 microns in diameter
PM2.5	Particulate Matter less than 2.5 microns in diameter
Q_{50}	50-year frequency storm event peak flow
RCB	reinforced concrete box
RCP	reinforced concrete pipe
Regional Board	Los Angeles Regional Water Quality Control Board
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SCRRA	Southern California Regional Rail Authority
SFB	San Fernando Groundwater Basin
SMARA	California Surface Mining and Reclamation Act
SO_2	Sulfur Dioxide
SUSMP	Standard Urban Stormwater Mitigation Plan
SWRCB	State Water Resources Control Board
TCE	trichloroethylene
TDS	total dissolved solids
TMDL	Total Maximum Daily Load
ULARA	Upper Los Angeles River Area
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VOC	Volatile Organic Compound

A.3 GLOSSARY

box culvert	A closed conduit of rectangular cross section used to pass floodwaters under a highway or railroad.
catch basin	A collection structure below ground designed to collect and convey water into the storm drain system.
cistern	Underground tanks used for storing stormwater
culvert	A covered channel or a large-diameter pipe used for the passage of surface water under a road, or other embankment.
design storm	A rainfall event of specified size and return frequency used to calculate the runoff volume and peak discharge rate to or from a flood control facility, such as a storm drain or a flood control basin.
detention basin	Surface or underground basins that capture flow and store it for later release under controlled conditions or reuse
discharge	The rate of flow or volume of water passing a point in a given time. Expressed using a unit of volume over time, typically cubic feet per second.
dry well	An excavated pit lined with gravel or other porous materials to infiltrate stormwater
fecal coliform bacteria	A group of organisms common to the intestinal tracts of humans and animals. The presence of fecal coliform bacteria in water, wastewater, or biosolids is an indicator of pollution and possible contamination by pathogens.
first flush	The delivery of a highly concentrated pollutant loading during the early stages of a storm, due to the washing effect of runoff on pollutants that have accumulated on the land prior to the storm.
force main	A pipe that carries water or wastewater under pressure from the discharge side of a pump to a point of gravity flow downstream.
freeboard	The vertical difference in elevation between the water level and a referenced point. Examples are the difference between the maximum water surface level behind a dam and the top of a dam, or the difference in elevation between the water surface at a culvert beneath the roadway and the surface of the roadway.
green waste	A collective term for yard waste consisting of leaves, tree trimmings, weeds, grass and other organic materials.
hydrograph	A graph showing the variation in stage or discharge in a stream or channel, over time, at a specific point along a stream.
impervious (impermeable)	Description of a material that prevents passage of water into the underlying soils. Examples of impervious surfaces include asphalt, concrete, roof tops, clay, and compacted soils.
infiltration	The absorption of water into the ground. The rate at which infiltration occurs is expressed in terms of depth per unit time, such as inches/hour.
non-point source pollution	Storm water conveyed pollution that is not identifiable to one particular source, and is occurring at locations scattered throughout the drainage basin. Typical sources include erosion, agricultural activities, and runoff from urban lands.

peak discharge (or peak flow)	The maximum instantaneous rate of flow during a storm, usually expressed in cubic feet per second.
porous pavement	A special type of pavement that allows rain to pass through it and infiltrate into the underlying soil, thereby reducing runoff from the site and surrounding areas.
retaining wall	A wall built to hold back or confine a mass of earth or body of water
retention basin	Surface or underground basin that captures flow and retain it until water infiltrates into the soil.
return period	A statistical term for the average frequency that a given event (such as a storm) of a particular magnitude may be expected to occur. The reciprocal of the recurrence interval is the probability that a given event of a certain magnitude will be equaled or exceeded in any given year for a particular location or region. For example, a storm having a 10-year return period statistically can be expected to occur, on average over a long period of time, once in a period of 10 years, a probability of occurrence of 0.10, or 10%.
riparian area	Land that borders a stream or river.
runoff	The excess portion of precipitation that does not infiltrate into the ground, but "runs off" and reaches a stream, water body or storm drain.
sediment	Soil material that is transported from its site of origin by water.
sedimentation	The process by which sand and mud carried by water settles down to and accumulates on the bottom of a natural (river, stream, lake) or manmade (reservoirs, basins, tanks) body of water.
sedimentation tank	A storage tank that allows settling of sediments by gravity
sheet flow	Runoff which flows over the ground surface as a thin, even layer, not concentrated in a channel.
standpipe	A vertical pipe or reservoir that is used to secure a uniform pressure in a water-supply system
stormwater separation device	A device that removes debris, oil and grease, and other pollutants from stormwater by gravity. Sand and other sediments settle to the bottom, and oil and grease are skimmed as stormwater passes through the device.
sump	A pit at the lowest point in a circulating or drainage system
swale	A shallow, depressed strip of land in which the filtering action of grass and soil infiltration are utilized to remove pollutants from urban stormwater.
vadose zone	A layer of unsaturated soil above the groundwater table
watershed	The area or region of land draining into a common outlet such as a river or body of water. Synonymous with river basin or drainage basin.

A.4 PREPARERS OF THE PROGRAM EIR

Los Angeles County Department of Public Works (Lead Agency)
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Stacie Nakao, Watershed Management Division

MWH (EIR Consultant)
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Jeffrey Smith, Southern California Association of Governments

Thomas Hanley, Southern California Regional Rail Authority

Mark Mackowski, ULARA Watermaster's Office

Doug Sprague, Vulcan Materials Company

Appendix B
Notice of Preparation and Comments Received

Appendix B contains the following materials:

- Notice of Preparation (NOP) and Initial Environmental Study (IES) for the Program EIR (November, 2002)
- Summary of oral comments received at the public scoping meeting
- Written comments received on the NOP

Notice of Preparation

To: Agencies, Organizations, and Interested Parties

Subject: Notice of Preparation of a Draft Program Environmental Impact Report in Compliance with Title 14, (CEQA Guidelines) Sections 15082(a), 15103, and 15375 of the California Code of Regulations

Los Angeles County Department of Public Works will be the Lead Agency under the California Environmental Quality Act (CEQA) for the preparation of a program environmental impact report (EIR) for the project identified below.

Agencies: We request the views of your agency as to the scope and content of the environmental information which is relevant to your agency's statutory responsibilities in connection with the project. Your agency will need to use the EIR prepared by the Los Angeles County Department of Public Works when considering your permit or other approval for the project.

Organizations and Interested Parties: Comments and concerns regarding the environmental issues associated with construction and operation of this project are requested from organizations and individuals.

The description, location, and potential environmental effects of the project are detailed in an Initial Environmental Study (IES) available for review at www.sunvalleywatershed.org and at local area libraries including: Van Nuys Branch (6250 Sylmar Avenue, Van Nuys), Panorama City Branch (14345 Roscoe Blvd., Panorama City), North Hollywood Regional Branch (5211 Tujunga Avenue, North Hollywood), Northwest Branch (3323 West Victory Blvd., Burbank), Sunland-Tujunga Branch (7771 Foothill Blvd., Tujunga), Pacoima Branch (13605 Van Nuys Blvd., Pacoima), Burbank Central (110 North Glenoaks Blvd., Burbank), City of Los Angeles Central (630 W. Fifth Street, Los Angeles), and San Fernando (217 North Maclay Ave., San Fernando). Documents related to the proposed project are available for review at Public Works (see contact information below). A summary of the project location, description, and potential environmental effects is provided below.

Project Title:	**Sun Valley Watershed Management Plan**
Project Location:	Sun Valley Watershed in the communities of Sun Valley and North Hollywood, City of Los Angeles, Los Angeles County. Please see the attached **Figure 1** for the locations of potential project elements.
Project Description:	The proposed project is a watershed management plan, which provides a blueprint for a multi-purpose flood control program to solve the local flooding problem in the Sun Valley Watershed area while increasing water conservation, recreational opportunities, and wildlife habitat, and reducing stormwater pollution. Implementation of the Watershed Management Plan will include construction of various stormwater facilities within the watershed, both small- and large-scale, including those for: retention and/or infiltration, conveyance, and distribution for reuse.
Potentially Significant Environmental Effects:	Air quality during project construction, disturbance of cultural resources during project construction, geologic hazards, water quality, mineral resources, noise during project construction, impacts to school sites and recreational facilities, traffic during project construction, and utilities

CEQA requires a **30-day public review** of the Notice of Preparation. The public review period is scheduled to begin on November 11, 2002 and end on December 10, 2002. Due to the time limits mandated by State law, your response must be received no later than 30 days after receipt of this notice. Please indicate a contact person in your response and send your response to the address below:

Mr. Vik Bapna
Los Angeles County Department of Public Works
Watershed Management Division
P.O. Box 1460, Alhambra, CA 91802-1460
Phone: (626) 458-4363
Fax: (626) 457-1526
E-mail: vbapna@ladpw.org

A public **scoping meeting** will be held on Wednesday, November 20, 2002, from 6:30 - 8:30 p.m. at Sun Valley Middle School located at 7330 Bakman Avenue, Sun Valley, CA 91352. All parties are welcome to attend and present environmental information that they believe should be addressed in the EIR.

VBapna.
Signature

11/6/02
Date

Vik Bapna
Printed Name

Senior Civil Engineer
Title

County of Los Angeles Department of Public Works

CEQA Initial Environmental Study

Sun Valley Watershed Management Plan

November 2002

MWH
MONTGOMERY WATSON HARZA

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Section 1
Project and Agency Information

1.1 PROJECT TITLE AND LEAD AGENCY

Project Title:	Sun Valley Watershed Management Plan
Lead Agency Name:	Los Angeles County Department of Public Works Watershed Management Division
Lead Agency Address:	P.O. Box 1460 Alhambra, CA 91802-1460
Contact Person:	Mr. Vik Bapna
Contact Phone Number:	(626) 458-4363
Project Sponsor's Name:	Same as Lead Agency.
Project Sponsor's Address:	Same as Lead Agency.

1.2 PROJECT LOCATION

The proposed project area is the Sun Valley Watershed, which is located in the City of Los Angeles, Los Angeles County. It is located approximately 14 miles northwest of downtown Los Angeles in the northeastern portion of the San Fernando Valley. The project area encompasses the communities of Sun Valley and North Hollywood. It is approximately bordered by Tujunga Wash on the west, Burbank-Glendale-Pasadena Airport on the east, Hansen Dam on the north, and Burbank Boulevard on the south. The proposed project is comprised of multiple elements located throughout the Sun Valley Watershed area. The boundaries of the Sun Valley Watershed and the locations of the potential project elements are shown on **Figure 1.**

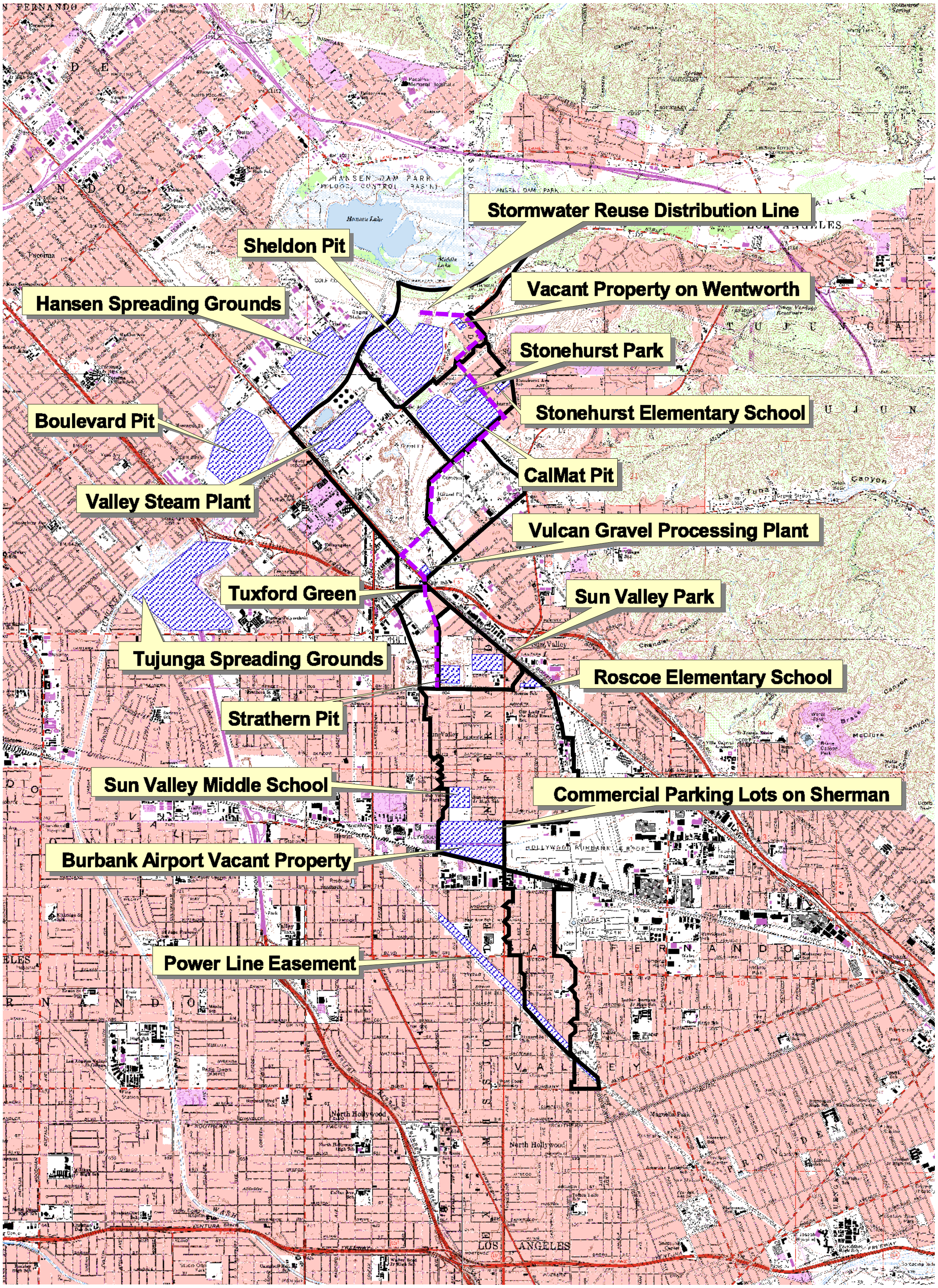

Figure 1
Project Site Map and Locations of Potential Project Elements

County of Los Angeles
Sun Valley Watershed Management Plan Initial Environmental Study

LOS ANGELES COUNTY WATERSHED MANAGEMENT

MWH
MONTGOMERY WATSON HARZA

1.3 SURROUNDING LAND USES AND SETTING

1.3.1 Regional Setting and Surrounding Land Uses

The Sun Valley Watershed is an urban watershed that drains into the Los Angeles River (**Figure 1**). The watershed is approximately 2,800 acres (4.4 square miles) in size, and is approximately 6 miles in length from north to south.

Freeways that provide access to the area include Interstate 5 (Golden State Freeway), State Highway 170 (Hollywood Freeway), and Interstate 210 (Foothill Freeway). Metrolink's Antelope Valley Line runs along San Fernando Road and intersects the project area near Tuxford Street. There are two public airports in the vicinity of the project area. Burbank-Glendale-Pasadena Airport is adjacent to and southeast of the project area, and Whiteman Airpark is located northwest of the project area.

The upper portions of the watershed, located north of the intersection of Tuxford Street and San Fernando Road, are primarily developed with industrial uses. These uses include actively mined as well as exhausted gravel pits, active landfills for inert construction debris, a power generating facility (Valley Steam Plant), an active municipal waste landfill (Bradley Landfill), the Vulcan gravel processing plant, various auto dismantling operations, and other industrial and commercial properties. Pacifica Hospital of the Valley is located across San Fernando Road from the Valley Steam Plant. The Hansen Spreading Grounds are located immediately northwest of the Valley Steam Plant. The Hansen Dam Golf Course, owned by City of Los Angeles, is located at the north end of the watershed. Low density residential uses, the Stonehurst Recreation Center, and the Stonehurst Elementary School (grades K-5) are located in the northeast portion of the watershed.

The lower portions of the watershed, located south of the Tuxford-San Fernando intersection, are primarily developed with low to medium density residential uses and some industrial and commercial uses. Sun Valley Park and Recreation Center, Sun Valley Middle School (grades 6-8) and Roscoe Elementary School (grades K-5) are located within this part of the watershed.

1.3.2 Existing On-site Land Uses

The project includes many elements located throughout the watershed. The existing land uses and the zoning and general plan designations for each potential element are shown in **Table 1**.

Table 1
Existing Land Uses and General Plan and Zoning Designations

Proposed Project Site	Existing Land Use	Zoning Designation*	General Plan Designation
Stormwater Retention and/or Infiltration Facilities			
Boulevard Pit	Gravel pit (active)	A1	Open Space
Burbank Airport Vacant Property	Vacant	M2	Light Manufacturing
CalMat Pit	Gravel pit (inactive); Landfill for inert waste (active)	A1 and RA	Open Space and Very Low Residential
Commercial Parking Lots on Sherman	Parking lots within commercial facilities	M2	Light Manufacturing
Power Line Easement	LADWP power line easement	PF	Public Facilities
Roscoe Elementary School	LAUSD school	PF	Public Facilities
Sheldon Pit	Gravel pit (inactive); Used for disposal of gravel washwater	A1	Open Space
Stonehurst Elementary School	LAUSD school	PF	Public Facilities
Stonehurst Recreation Center	Community park	OS	Open Space
Strathern Pit	Gravel pit (inactive); Landfill for inert waste (active)	M2, M3, and P	Light Manufacturing
Sun Valley Middle School	LAUSD school	PF	Public Facilities
Sun Valley Park	Community Park	OS	Open Space
Tuxford Green	Vacant	PF	Public Facilities
Vacant Property on Wentworth	Vacant	RA	Very Low Residential
Valley Steam Plant	LADWP power plant	PF	Public Facilities
Vulcan Gravel Processing Plant	Gravel processing facility	M3	Heavy Manufacturing
Stormwater Conveyance Facilities	Roadways	--	--
Tujunga Wash Diversion and Infiltration at Hansen/Tujunga Spreading Grounds	County flood conveyance facilities	--	--
Stormwater Reuse Distribution System	Roadways	--	--
On-site BMPs	TBD	Various	Various

TBD: To be determined
* Zoning Designations

A1:	Agricultural	M3:	Heavy Industrial	PF:	Public Facilities
AP:	Airport	OS:	Open Space	RA:	Suburban
M2:	Light Industrial	P:	Automobile Parking		

1.3.3 Hydrology and Water Quality

The topography of the watershed is characterized by a moderate slope with drainage patterns flowing from north to south. Although much of the watershed is developed and covered by impervious surfaces, the area is not served by any comprehensive underground stormdrain system. Therefore, stormwater is conveyed on street surfaces, and as a result, moderate to severe flooding occurs in the project area with even light or moderate rainfall. Stormwater leaving the watershed eventually drains to the Los Angeles River.

The watershed is located within the San Fernando Valley Groundwater Basin (Basin). The Basin, which provides a significant portion of Los Angeles' drinking water, is composed of alluvial fill and does not have continuous confining layers above groundwater. As a result, groundwater quality has been impacted by various industrial activities. Since the mid 1980s, the Basin has been subdivided into four discrete Superfund sites for clean up of volatile organic compounds (VOCs), including trichloroethylene (TCE) and perchloroethylene (PCE). EPA is responsible for ongoing cleanup and monitoring activities.

1.4 OTHER PUBLIC AGENCIES WHOSE REVIEW AND/OR APPROVAL MAY BE REQUIRED

- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency, Region 9 (EPA)
- U.S. Fish and Wildlife Service
- California Department of Fish and Game
- California Department of Health Services
- California Department of Parks and Recreation, Los Angeles District
- California Department of Transportation, District 7
- California Department of Water Resources(Division of Safety of Dams and Division of Planning and Local Assistance)
- California Regional Water Quality Control Board, Los Angeles Region
- South Coast Air Quality Management District (SCAQMD)
- Upper Los Angeles River Area Watermaster
- Los Angeles Unified School District (LAUSD)
- Southern California Regional Rail Authority
- Burbank-Glendale-Pasadena Airport Authority
- Los Angeles County Metropolitan Transportation Authority
- City of Los Angeles, Department of Recreation and Parks
- City of Los Angeles, Department of Water and Power (LADWP)
- City of Los Angeles, Department of Public Works

1.5 PROJECT BACKGROUND AND OBJECTIVES

The Sun Valley Watershed area is faced with a critical need to solve its severe and frequent flooding problems. The area is currently not served by any comprehensive underground stormdrain system. During rainfall events, stormwater flows are conveyed by curb and gutter along city streets, and water collects at several of the major intersections in the area, causing severe flooding on the order of two to three feet in depth.

The traditional approach to flooding problems has been to build stormdrains, which quickly and efficiently convey stormwater away from people and properties. However, the traditional approach can have adverse impacts on surface water quality, because stormdrains collect and carry pollutants from roads, parking lots, and other urban surfaces to the rivers and ocean. In addition, stormdrains inhibit the natural recharge of groundwater.

The Sun Valley Watershed Stakeholders Group (Stakeholders) was formed in 1998 to develop a holistic flood control plan for the Sun Valley area that would be an alternative to using only traditional stormdrains and would provide multiple benefits in addition to flood control. The Stakeholders consist of various local agencies, area residents, businesses and environmental groups, and the group's monthly meetings are facilitated by the County of Los Angeles Department of Public Works (County).

The mission of the Stakeholders is:

> *"…to solve the local flooding problem while retaining all stormwater runoff from the watershed, increasing water conservation, recreational opportunities, and wildlife habitat, and reducing stormwater pollution."*

The County is currently developing the Sun Valley Watershed Management Plan (Watershed Management Plan), which presents a strategy to implement the mission of the Stakeholders. The County is the lead agency under the California Environmental Quality Act (CEQA), and will be responsible for the environmental documents required by CEQA for the Sun Valley Watershed Management Plan. The following seven objectives have been identified for the proposed project:

1) **Reduce local flooding.** The primary objective of the proposed project is to reduce the existing and projected future flooding to levels consistent with County standards. Each of the objectives below is consistent with this primary objective.

2) **Increase water conservation.** Under existing conditions, much of the rainfall that the Sun Valley Watershed area receives drains to the Los Angeles River. If captured within the watershed, stormwater can be used to recharge groundwater or replace existing uses that do not require potable water, such as irrigation for landscaped areas and industrial uses.

3) **Increase recreational opportunities.** Increases in recreational opportunities and open space areas improve the quality of life in a community. Flood control facilities can be designed to also serve as parks, open space, or green areas to provide increased recreational opportunities for the residents of the Sun Valley Watershed area.

4) **Increase wildlife habitat.** The Sun Valley Watershed area currently lacks substantial wildlife habitat. The proposed project aims to increase wildlife habitat by designing flood control facilities to also serve as wildlife habitat areas.

5) **Improve water quality.** Stormwater runoff from urban land uses can contribute significant amounts of pollutants to downstream surface waters. Reduction of pollutant discharges to the Los Angeles River through stormwater management is an important goal of the project.

6) **Provide additional environmental benefits.** Implementation of alternative flood control strategies can provide many environmental benefits in addition to the ones discussed above. For example, tree planting can help reduce urban runoff while providing shade for buildings, resulting in reduced energy use for air conditioning and reduced heat island effect. The proposed project aims to maximize these types of additional environmental benefits.

7) **Increase multi-agency participation.** By promoting multi-agency participation, the proposed project aims to encourage a more involved government and community, attract multiple funding partners, work with local schools to provide aesthetic and other benefits for their campuses, increase public awareness of watershed issues, and develop a model for similar projects in the future.

1.6 PROJECT DESCRIPTION

The Sun Valley Watershed Management Plan (proposed project) is a long-range plan which provides a blueprint for a multi-purpose flood control program based on the objectives identified by the Stakeholders as described above.

As a result of a comprehensive analysis of opportunities and constraints, the County has developed multiple plan elements which would provide flood control benefits while meeting other plan objectives such as water conservation, improving water quality, increasing recreational opportunities and wildlife habitat, improving air quality, and energy conservation. The planned stormwater management facilities would be sized to meet the County's design criteria for providing flood protection. The individual plan elements necessary to achieve this level of flood protection will be assembled into several alternatives. For example:

- Maximize infiltration of local stormwater. This strategy includes collection, treatment, and infiltration of stormwater using both large and small facilities throughout the watershed.
- Maximize water conservation. This strategy also maximizes infiltration of stormwater but includes coordination with a neighboring watershed. A diversion from Tujunga Wash would be constructed under this alternative.
- Maximize stormwater reuse. Under this strategy, stormwater would be collected, treated, and reused for irrigation and industrial processes. Infiltration into the groundwater would be minimized.
- Convey peak flows to River. In addition to the above strategies, a plan will also be considered which includes construction of a stormdrain to convey peak storm flows to the

Los Angeles River. This alternative would also include facilities which provide water conservation and stormwater pollution reduction benefits.

1.6.1 Potential Plan Elements

The proposed plan elements can be categorized into the following groups:

- Stormwater Retention and/or Infiltration Facilities
- Stormwater Conveyance Facilities
- Tujunga Wash Diversion and Infiltration at Hansen Spreading Grounds
- Stormwater Reuse Distribution System
- On-site Best Management Practices (BMPs)

1.6.1.1 Stormwater Retention and/or Infiltration Facilities

The construction and operation of stormwater retention facilities throughout the watershed is a principle component of the proposed project. The proposed stormwater retention facilities include surface retention basins, underground infiltration facilities and cisterns, and other structures to hold stormwater from onsite and/or surrounding areas. The collected stormwater would be used to recharge groundwater, reused for non-potable purposes such as irrigation, or both. Retention facilities would be designed to remove sediments, oil, grease, heavy metals and other pollutants from the collected stormwater prior to reuse or groundwater recharge. Disinfection facilities may also be provided where necessary. Where appropriate, surface stormwater retention facilities would be designed to provide active and passive recreation areas and/or wildlife habitat areas.

Potential sites for the new stormwater retention facilities are listed on **Table 2** and are shown on **Figure 1.**

Table 2
Proposed Sites of New Stormwater Retention and/or Infiltration Facilities

Site Name	Site Description	Location
Gravel Pits		
Boulevard Pit	Active gravel pit	Southern corner of San Fernando Road and Branford Street
CalMat Pit	Exhausted gravel pit; active landfill for inert construction waste	Area bounded by Dronfield Avenue, Peoria Street, and Wick Street
Sheldon Pit	Exhausted gravel pit; used for disposal of gravel washwater	Northern corner of Wentworth Street and Glenoaks Boulevard
Strathern Pit	Exhausted gravel pit; active landfill for inert construction waste	Area bounded by Tujunga Avenue, Strathern Street, and Fair Avenue
Schools and Parks		
Roscoe Elementary School	LAUSD School	Northwestern corner of Strathern Street and Clybourn Avenue
Stonehurst Elementary School	LAUSD School	West of Stonehurst Avenue between Fenway Street and Art Street
Stonehurst Recreation Center	City of Los Angeles park	Southwest of Dronfield Avenue between Allegheny Street and Wicks Street
Sun Valley Park	City of Los Angeles park	Area bounded by Cantara Street, Lorne Street, Vineland Avenue, and Fair Avenue
Sun Valley Middle School	LAUSD School	Area bounded by Valerio Street, Fair Avenue, Bakman Avenue, and Sherman Way
Other		
Burbank-Glendale-Pasadena Airport Vacant Area	Undeveloped parcel owned by Burbank-Glendale-Pasadena Airport Authority	Bounded by Vineland Avenue, Tujunga Avenue, Metrolink railroad, and commercial properties on the north
Commercial Parking Lots on Sherman Way	Parking facilities within a commercial compound	Area bounded by Sherman Way, Tujunga Avenue, Vineland Avenue, and Burbank Airport vacant area on the south
Power Line Easement	LADWP power line easement	Along Whitnall Highway between Clybourn Avenue and Tujunga Avenue
"Tuxford Green"	Vacant lot and an existing culvert	Intersection of Tuxford Street and San Fernando Road, including the vacant lot on the southern corner
Vacant Property on Wentworth	Vacant property in a residential area	Northwestern corner of the area bounded by Wentworth Street, Wealtha Avenue, Sheldon Street, and Stonehurst Avenue
Valley Steam Plant	LADWP power plant	Area bounded by Sheldon Street, San Fernando Road, Glenoaks Boulevard, and Tujunga Wash
Vulcan Gravel Processing Plant	Gravel processing facility owned by Vulcan Materials Company	Northern corner of San Fernando Road and Tuxford Street

1.6.1.2 Stormwater Conveyance Facilities

In order to redirect stormwater from the street surfaces to the various stormwater retention facilities described above, the project would require construction of underground pipes and stormwater inlets in streets (e.g., catch basin inlets along curbs and gutters) tributary to proposed retention facilities. The exact locations of the pipes and inlets will be determined during detailed design of the conveyance facilities.

1.6.1.3 Tujunga Wash Diversion and Infiltration at Hansen and Tujunga Spreading Grounds

This element involves construction and operation of underground pipes to divert flood flows from Tujunga Wash into the Sheldon Gravel Pit during large storm events. The diverted flood flows would be temporarily stored in the gravel pit and then transferred to the Hansen Spreading Grounds and/or Tujunga Spreading Grounds for infiltration once the storm event has passed. Stabilization of the gravel pit side slopes would be included in design of this element. This component would provide water conservation benefits by decreasing the amount of stormwater runoff from the Tujunga Wash to the Los Angeles River and increasing groundwater recharge at the Hansen Spreading Grounds. Improvements to Sheldon Pit would also include stormwater treatment facilities, wildlife habitat enhancements (e.g., wetlands) and recreational opportunities (e.g., soccer fields).

1.6.1.4 Stormwater Reuse Distribution System

This element includes construction of a stormwater reuse distribution system in the upper portion of the watershed. The distribution system would transport the stormwater collected at the proposed retention basin at Strathern Pit to two large non-potable water users within the watershed. Vulcan Gravel Processing Plant would use stormwater for gravel processing operations such as gravel washing. The Hansen Dam Golf Course would use stormwater for irrigation. The distribution line would be constructed underground within roadways.

1.6.1.5 On-site Best Management Practices

Stormwater Best Management Practices (BMPs) are techniques and methods that manage stormwater by reducing runoff and promoting onsite infiltration. They are generally small-scale and localized in comparison to conventional regional flood control facilities. BMPs mitigate the adverse impacts of flooding and surface water quality degradation that result from urbanization and increases in impervious surfaces. A wide variety of BMPs are available, including backyard cisterns and dry wells, use of porous pavement, mulching, tree planting, and education. Elements of the plan involve BMPs at various residential, commercial, and industrial parcels throughout the watershed, as well as along public right-of-ways such as street medians and freeway embankments.

1.6.2 Pilot Projects

Six pilot projects have been preliminarily defined as part of the Watershed Management Plan in order to demonstrate the effectiveness of non-traditional stormwater management techniques.

The pilot projects are intended to be completed in a relatively short timeframe and accomplish visible results in order to continue to build community support for the overall Watershed Management Plan. The pilot projects are described in detail below.

1.6.2.1 CalMat Pit

CalMat Pit is an exhausted gravel pit which is currently operated by Vulcan Materials Company as a landfill for inert construction waste. This 90-acre site is located north of the intersection of Peoria Street and Glenoaks Boulevard in the northern portion of the watershed. A 30-acre area, which is currently not in use for landfilling, on the northeastern end of the site would be developed with retention basins to capture onsite runoff and the runoff from 200 acres of residential area surrounding the pit. The final phase of this pilot project includes development of a park, including a 15-acre lake/wetland and an island, to be connected to the neighboring Stonehurst Recreation Center.

1.6.2.2 Valley Steam Plant

Valley Steam Plant is an active power-generating facility owned and operated by LADWP. It is located north of the intersection of Sheldon Street and San Fernando Road, and southeast of Hansen Spreading Grounds. This pilot project would create retention and infiltration basins in unutilized areas of the Steam Plant in order to capture runoff from the Steam Plant (and adjacent commercial property in phase two) and surrounding areas. The pilot project includes a number of measures to improve the quality of the collected runoff for later reuse and infiltration. Areas surrounding the retention and infiltration basins would be landscaped in order to provide wildlife habitat, add recreation opportunities and improve the environment for Steam Plant employees.

1.6.2.3 Vulcan Gravel Processing Plant

The Vulcan Materials Company Gravel Processing Plant is located just north of the intersection of Tuxford Street and San Fernando Road. This pilot project would create a retention basin within the Processing Plant to retain and treat the stormwater runoff generated on the site. The treated runoff would then be pumped to a storage tank for later reuse or flow to an infiltration basin to recharge groundwater.

1.6.2.4 "Tuxford Green"

This pilot project site is located at the intersection of San Fernando Road and Tuxford Avenue, north of Interstate 5. It includes the empty lot at the south corner of the intersection and the adjacent drainage culvert. The proposed pilot project, named Tuxford Green, includes installation of catch basins and underground stormdrains at San Fernando Road and Tuxford Avenue and underground water storage tanks at the south corner of the intersection. This pilot project is designed to decrease flooding at this intersection, which has been experiencing severe flooding for many years. The pilot project would improve stormwater quality through the use of stormwater separation devices that remove debris, oil and grease, and suspended pollutants. Landscaping and signage would be added at the southern corner of the intersection to improve the visual character of the area and inform the public about the project. The landscaped area would be irrigated with the collected stormwater.

1.6.2.5 Sun Valley Middle School

Sun Valley Middle School is located between Sherman Way and Valerio Street and between Fair Avenue and Bakman Avenue. The school is in the Los Angeles Unified School District and has approximately 3,000 students from grades 6 through 8. This pilot project would manage runoff from the school grounds and nearby upstream neighborhoods to alleviate flooding problems from a total of over 33 acres. The proposed pilot project includes excavation and depression of the sports area to create a drainage basin, treatment of stormwater runoff using sedimentation tanks, storage of runoff in underground tanks for future irrigation use, and infiltration of excess runoff. Additional flood control, stormwater pollution control, and infiltration would be provided in the school parking lot and the school Quad. The school parking lot would include landscaped grassy swales, sedimentation tanks and dry wells. The school Quad would be excavated and depressed to capture stormwater for infiltration through dry wells. Trees would be planted to lower energy costs and reduce air pollution.

1.6.2.6 Sun Valley Park

Sun Valley Park and Recreation Center is a City of Los Angeles park located on Vineland Avenue between Cantara Street and Lorne Street. This pilot project involves construction of structures to capture, treat, and infiltrate the stormwater flow from 21 acres of the park and 24 acres of residential and commercial land upstream of the park. Stormwater runoff would be directed into the park using a system of underground drains and catch basins in the surrounding streets, which would include pretreatment devices to remove pollutants such as suspended solids and heavy metals as necessary. The runoff would then enter two infiltration basins to be constructed in the park. To capture and infiltrate runoff generated within the park, portions of the park would be re-graded to create a swale system, and dry wells would be installed.

Section 2
Environmental Analysis

2.1 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☒ Geology and Soils	☒ Noise
☐ Agricultural Resources	☐ Hazards and Hazardous Materials	☐ Population and Housing
☒ Air Quality	☒ Hydrology and Water Quality	☒ Public Services
☐ Biological Resources	☐ Land Use and Planning	☒ Recreation
☒ Cultural Resources	☒ Mineral Resources	☒ Transportation and Traffic
		☒ Utilities and Service Systems

2.2 AGENCY DETERMINATION

On the basis of this initial evaluation:

☐ I find that the project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.

☒ I find that the project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

V Bapna.   11/6/02.

Signature   **Date**

Vik Bapna
Printed Name

Senior Civil Engineer
Title

2.3 ENVIRONMENTAL CHECKLIST

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

Discussion:

a) The project sites are located in an urbanized area, and no significant visual resources exist which would be negatively impacted by the project implementation. The project does not involve any structures of significant size which would have the potential to obstruct scenic vistas. No impacts would occur.

b) No state scenic highways are located in the vicinity of the project sites. The Sun Valley Community Plan (Los Angeles, 1999a) designates Stonehurst Avenue, La Tuna Canyon Road, Wentworth Street, and the Foothill Freeway (Interstate 210) as Scenic Highways. The Plan proposes that land use controls be established for protection and enhancement of scenic resources visible from and contiguous to these Scenic Highways. Several of the proposed project sites, including CalMat Pit, Sheldon Pit, Stonehurst Recreation Center, and Stonehurst Elementary School, are located in the vicinity of Stonehurst Avenue and Wentworth Street. However, the project does not involve any structures of significant size that have the potential to obstruct views from these roadways. The project would have a less than significant impact on trees, rock outcroppings, historic buildings, or other scenic resources within the viewshed of a state or local scenic highway.

c) The project sites are located in an urban area and are currently developed with commercial, industrial, and residential uses. During construction of the project, grading and other construction activities may temporarily degrade the visual character and quality of the project sites. However, construction related impacts would be short-term and localized. Once the construction is completed, the project is expected to improve the visual character and quality of the project sites and their surroundings through addition of landscaped areas, parks, and other open spaces. The project does not involve large aboveground buildings or other large structures that could have a negative impact on the area's visual character or quality. Because the negative aesthetic impacts associated with project construction would be temporary and localized, impacts on visual character and quality are less than significant.

d) The project may involve installation of new sources of light for illuminating parks created as a part of the project. Due to the industrial nature of the areas where installation is anticipated, the new lighting is not expected to result in significant impacts to day or nighttime views. If lighting in areas adjacent to residences would be required, they would be designed and shielded to minimize impacts on the residences. The project would not require materials that would add a new glare source to the project area.

Construction activities are not anticipated to require additional lighting because activities would normally be scheduled to take place during daylight hours. However, if the construction schedule is such that nighttime activities are necessary, temporary lighting may be required. If necessary, additional lighting would be temporary and short-term. Project related impacts on light and glare are therefore less than significant.

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

2.3.2 Agricultural Resources

Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

Discussion:

a) and c)

The proposed project sites are located in an urbanized area. The project sites are not occupied by existing Farmland as defined by the California Resources Agency, and are not located in the vicinity of existing agricultural operations. Therefore, the projects would not result in conversion of Farmland to non-agricultural use. No impacts would occur.

b) Among the proposed project sites, Boulevard Pit, CalMat Pit, and Sheldon Pit have a zoning designation of Agricultural (A-1). The Boulevard Pit is currently an actively mined gravel pit. CalMat Pit and Sheldon Pit are exhausted gravel pits that are currently used as disposal sites for inert wastes (CalMat Pit) and gravel washwater (Sheldon Pit) generated by local gravel processing operations. Existing soils at these sites include sand, gravel, and inert wastes generated from gravel processing operations. Based on its past and existing land uses and soil characteristics, these sites under existing conditions do not have the capacity to support agricultural operations. Therefore, implementation of the proposed project would not represent a conflict with the existing zoning for agricultural use. No Williamson Act contracts are associated with these sites. No other proposed project site has a zoning designation for agricultural use. This impact is less than significant.

2.3.3 Air Quality

Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☒	☐	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emission which exceed quantitative thresholds for ozone precursors)?	☒	☐	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Create objectionable odors affecting a substantial number of people?	☐	☒	☐	☐

Discussion:

a) The project sites are located within the South Coast Air Basin (SCAB), which is regulated by the South Coast Air Quality Management District (SCAQMD). The applicable air quality plan for the project area is the Air Quality Management Plan (AQMP) developed by SCAQMD. A project is deemed inconsistent with the applicable air quality plan if it would result in population and/or employment growth that exceeds growth estimated in the applicable air quality plan. The project does not include development of housing or employment centers, and would not induce population or employment growth. Therefore, the project would not conflict with or obstruct the implementation of the applicable air quality plan. No impacts would occur.

b) and c)

Construction of the project involves activities such as grading and use of construction equipment and vehicles. Emissions associated with these activities would be temporary and are not expected to exceed thresholds for construction activities as defined by the SCAQMD. However, the EIR will include a detailed evaluation of the project related air emissions and will define mitigation measures to minimize potential impacts as feasible and appropriate. The impact of project construction on air quality may be potentially significant.

The project includes operation of underground pipelines, cisterns, infiltration systems, and other structures for conveyance and storage of stormwater. Minor air pollutant emissions would result from vehicle trips necessary for facility maintenance. Emissions from project operation will be calculated and compared to thresholds defined by the SCAQMD. Beneficial effects of project operation related to air quality will also be discussed in the EIR. These include reductions in energy consumption related to tree planting and the increased use of greenwaste and compost within the watershed, which will reduce the existing levels of transportation emissions related to disposal of these materials.

d) Certain land uses such as long-term health care facilities, rehabilitation centers, convalescent centers, retirement homes, residences, schools, playgrounds, child care centers, and athletic facilities are considered sensitive receptors for purposes of air pollution control and monitoring requirements (SCAQMD, 1993). Air pollutant emissions associated with construction of the project may, but are not expected to, expose sensitive receptors in the vicinity of the project sites to pollutant concentrations in excess of thresholds defined by the SCAQMD. Impacts on sensitive receptors resulting from construction activities would be temporary. However, the EIR will include a detailed evaluation of construction emission impacts and will recommend mitigation measures to minimize potential impacts as feasible and appropriate. The impact of project construction on air quality is potentially significant.

e) Construction of the project would involve the use of heavy equipment which would generate exhaust pollutants and may create nuisance odors. However, any odor impacts would be temporary and confined to the immediate vicinity of the equipment, and would not affect a substantial number of people. Retention basins and other facilities that have standing water for a period of time may create odors. However, regular maintenance of these facilities as a part of the project is expected to minimize objectionable odors from these sources. After incorporation of appropriate mitigation, impacts from objectionable odors would be less than significant.

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

2.3.4 Biological Resources

Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☒	☐

Discussion:

a) Since the proposed Sun Valley Watershed area has been nearly completely urbanized and/or developed for decades, many of the habitats or substrates with the potential to support candidate, sensitive or special status species of plants or animals that historically occurred have been modified by existing land uses. While land uses such as residential and commercial/retail have virtually eliminated the potential for these species to occur, land uses such as commercial/recreational (e.g., golf courses) and industrial (e.g., gravel pits) have the potential to contain substrates or habitats that may support relict or seral populations of candidate, sensitive or special status species of plants or animals. Based upon review of historic records, aerial photographs and limited ground truthing, the potential exists for the following plant or animal species to occur in the Sun Valley Watershed Management Plan area (common names only): Plants) Nevin's barberry, Davidson's bushmallow, slender-horned spineflower, San Fernando Valley spineflower, and Plummer's mariposa lily; and, Animals) western spadefoot, arroyo southwestern toad, southwestern pond turtle, California gnatcatcher, least Bell's vireo, San Diego black-tailed jackrabbit, coast horned lizard, and orange-throated whiptail. The portions of the watershed with the greatest, though still limited, potential to support these species are portions of landfills or gravel pits that are either no longer in active use, or have been inactive for several years. In the event that subsequent biological surveys determine the presence of these or other protected species within the project area, then it is anticipated that implementation of the Watershed Management Plan would provide opportunities to work with the existing land owners to allow for the continuation of operation and maintenance activities in addition to protecting or preserving the species in question, as well as to restore or enhance the population of the species on the site. After incorporation of appropriate mitigation, impacts on sensitive species would be less than significant.

b) Many of the riparian and other sensitive habitats that historically occurred in the Sun Valley Watershed have been modified by existing land uses. While land uses such as residential and commercial/retail have virtually eliminated the potential for these habitats to occur, land uses such as commercial/recreational (e.g., golf courses) and industrial (e.g., gravel pits) have the potential to contain conditions with the potential support relict or seral patches of these habitats. Based upon review of historic records, aerial photographs and limited ground truthing, the potential exists for the following habitats to occur in the Watershed Management Plan area: mule fat scrub, southern willow scrub, southern mixed riparian, and south coast live oak riparian, Riversidean alluvial fan sage scrub, and Riversidean sage scrub. The portions of the watershed with the greatest, though still limited, potential to support these habitats are portions of landfills or gravel pits that are either no longer in active use, or have been inactive for several years. In the event that subsequent biological surveys determine the presence of these or other sensitive natural habitat within the project area, then it is anticipated that implementation of the Sun Valley Watershed Management Plan would provide opportunities to work with the existing land owners to allow for the continuation of operation and maintenance activities in addition to protecting or preserving the habitat in question, as well as restore or enhance the habitat on the site. After incorporation of appropriate mitigation, impacts on sensitive natural communities would be less than significant.

c) Since the Sun Valley Watershed has been nearly completely urbanized and/or developed for decades, U.S. Army Corps of Engineers jurisdictional waters and wetlands that historically occurred have either been impacted prior to the implementation of the Federal Clean Water Act or have been modified consistent with the terms and conditions of existing permits by current development. The portions of the watershed with the greatest, though still limited, potential to support jurisdictional waters or wetlands are portions of gravel pits that are either no longer in active use, or have been inactive for several years. In the event that subsequent surveys identify jurisdictional water or wetland functions and/or values, then it is anticipated that implementation of the Watershed Management Plan would provide opportunities to work with the existing land owners to allow for the continuation of operation and maintenance activities consistent with the Federal Clean Water Act. Emphasis would be on protecting or preserving the habitat in question, as well as restoring, enhancing, or creating greater wetland functions and values as part of project implementation. After incorporation of appropriate mitigation, impacts on wetlands would be less than significant.

d) Virtually all of the viable fish and wildlife movement corridors that historically occurred in the Sun Valley Watershed have been modified by existing land uses. While land uses such as residential and commercial/retail have virtually eliminated the potential for these movement corridors to occur, land uses such as commercial/recreational (e.g., golf courses) and industrial (e.g., gravel pits) may contain conditions or habitats with the potential support wildlife movement in the project area. Implementation of the Watershed Management Plan would provide opportunities to work with the existing landowners to allow for the continuation of operation and maintenance activities while restoring, enhancing, or creating movement corridors within the project area. Project-related impacts on wildlife corridors are less than significant.

e) Many of the resources that are protected by local resource protection ordinances and policies in the Sun Valley area have already been impacted or modified by the existing land uses. Implementation of the Watershed Management Plan would provide limited opportunities to restore, augment, or create resources or habitat that may be subject to local regulation or protection. It is anticipated that implementation of the Watershed Management Plan would permit existing residential, commercial, and industrial development within the project area to continue to be operated and maintained consistent with all local policies and ordinances protecting natural resources. Project-related impacts on local biological ordinances or policies would be less than significant.

f) Species or habitats covered within any Habitat Conservation Plans, Critical Habitat Designations, Natural Community Conservation Plans, Significant Ecological Areas, or other approved conservation plans have not been identified within the project area. Potential “take” or impacts to endangered, threatened, or other special status plants, animals or habitats, if subsequently documented as occurring within the watershed area prior to implementation of the project, would occur consistent with federal, state or local regulations or policies. It is anticipated that implementation of the Watershed Management Plan would permit existing residential, commercial, and industrial development within the project area to continue to be operated and maintained consistent with the terms and conditions or operating protocols of any Habitat Conservation Plan, Natural Community Conservation Plan, or other conservation plan necessary as a condition of project approval. Project-related impacts on adopted habitat plans would be less than significant.

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.3.5 Cultural Resources				
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☒	☐	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☒	☐	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☒	☐	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☒	☐	☐	☐

Discussion:

a) The City of Los Angeles has designated the Stonehurst Recreation Center Building, constructed of native stones, as a historic-cultural monument. According to the Sun Valley – La Tuna Canyon Community Plan (City of Los Angeles, 1999a), local stones were used as building material in early housing in the area, particularly in the Stonehurst neighborhood; many of these houses still remain and should be considered for Historic Cultural Monument status. The proposed project may involve modifications to portions of the Stonehurst Elementary School and the Stonehurst Recreation Center sites. However, the project would not involve modifications to the Stonehurst Recreation Center Building or the existing residential buildings in the Stonehurst neighborhood. Therefore, project-related impacts on the historical and cultural resources in the Stonehurst neighborhood would be less than significant.

No other significant historical resources are currently known for the other proposed project sites. However, a records search and a site survey will be conducted to determine whether significant historical resources exist on the proposed project sites. Pending completion of this investigation, project-related impacts on historic resources may be potentially significant.

b), c), and d)

Located in an urban area, the proposed project sites have been previously disturbed during excavation, grading, and construction of the existing residential, commercial, and industrial structures and public facilities. Two of the proposed project sites are currently undeveloped. The proposed project sites do not include any known cemeteries.

Construction of the proposed project would involve excavation and therefore may have an impact on archaeological resources, paleontological resources, and/or human remains if any exist below the earth's surface. A records search and a site survey will be conducted to determine whether there is any evidence that significant archaeological or paleontological resources and/or human remains exist on the proposed project sites. Pending completion of this investigation, project-related impacts on historic resources may be potentially significant.

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

Discussion:

a)-i) According to the California Geological Survey (2002), the project sites are located outside of areas identified as Alquist Priolo Earthquake Fault Zones. However, there are many active faults in the area, the closest of which is the Verdugo Fault. The project does not involve construction of habitable structures or other large aboveground structures and therefore would not result in a substantial increase in the risk of damage from fault rupture. However, the EIR will include a detailed evaluation of the potential project-related risk from fault rupture and will recommend mitigation measures to minimize potential impacts as feasible and appropriate. This impact is anticipated to be less than significant as mitigated.

a)-ii) Located in a seismically active area, the project sites would be subject to ground shaking and potential damage during a seismic event. However, the project does not involve construction of habitable structures or other large aboveground structures and therefore would not result in a substantial increase in the risk of damage from seismic ground shaking. The construction and installation activities for the project would conform to the latest versions of the California Building Code, the Uniform Building Code, the City of Los Angeles Building Code and other applicable federal, state and local codes. Adherence to these regulations is required for the project and would reduce potential seismic impacts. Therefore, this impact is anticipated to be less than significant as mitigated.

a)-iii) Liquefaction refers to loose, saturated sand or gravel deposits that lose their load supporting capability when subjected to intense shaking. Review of the State of California Seismic Hazard Zones Map for the

Burbank Quadrangle (California Department of Conservation, 1999) indicates that portions of some of the project sites are located in an area considered susceptible to liquefaction. The EIR will include a detailed evaluation of the potential project-related risk from liquefaction and will recommend mitigation measures to minimize potential impacts as feasible and appropriate. This impact may be potentially significant.

a)-iv) The project includes use of gravel pits to retain stormwater runoff for flood control purposes. Some of the gravel pits included in the project are designated as "Cluster of Small Shallow Surfacal Landslides" in Exhibit C, Landslide Inventory & Hillside Areas, in the City of Los Angeles (1996) General Plan Safety Element. The State of California Seismic Hazard Zones Map for the Burbank Quadrangle (California Department of Conservation, 1999) also indicates that some areas of the gravel pits are susceptible to earthquake-induced landslides. The EIR will include a detailed evaluation of the potential project-related risk from landslides and will recommend mitigation measures to minimize potential impacts as feasible and appropriate. This impact may be potentially significant.

b) During construction of the project, onsite soils would be temporarily prone to erosion during the excavation and grading phase, especially during heavy rains. After the construction of the project is completed, project site surfaces would be landscaped or repaved, and would not be subject to substantial erosion or loss of topsoil. Therefore, project-related effects on soil erosion would be limited to temporary construction impacts. However, the EIR will include a detailed evaluation of this issue and will recommend mitigation measures to minimize potential impacts as feasible and appropriate. This impact is anticipated to be less than significant as mitigated by standard erosion control measures.

c) As discussed above in items a)-iii) and a)-iv), the proposed project sites include areas that may be or may become unstable due to liquefaction and/or landslides. The EIR will include a detailed evaluation of the potential project-related risk due to these geological factors and will recommend mitigation measures to minimize potential impacts as feasible and appropriate. This impact may be potentially significant.

d) The proposed project involves infiltration of stormwater into the ground for groundwater recharge. If clay soils are present at the infiltration sites, risk from expansive soils may be present. The project does not involve construction of habitable structures or other large aboveground structures and therefore is not expected to result in a substantial increase in risk to life or property due to expansive soils. However, the EIR will include a detailed evaluation of this issue and will recommend measures to minimize potential impacts as feasible and appropriate. Therefore, this impact is anticipated to be less than significant as mitigated.

e) The project sites are served by a public sewer system. No septic tanks or alternative wastewater disposal systems would be required for the project. No impacts would occur.

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.3.7 Hazards and Hazardous Materials				
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☒	☐	☐

	Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☒	☐	☐
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☒	☐
f)	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐
h)	Expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Discussion:

a), b), and c)

The proposed project may involve use of chlorine for disinfection of collected stormwater prior to reuse. If gaseous chlorine is used for disinfection as part of the proposed project, standard mitigation measures including development of risk management plans would be required in order to minimize the potential hazard from accidental release of chlorine. Through incorporation of these standard mitigation measures, the use of chlorine for the proposed project is not expected to create a significant hazard to the public.

Section 15186 of the CEQA Guidelines contain specific requirements for a project which is located within one-fourth mile of a school and may reasonably be anticipated to emit hazardous air emissions or handle acutely hazardous materials. The proposed project sites include several schools, including the Sun Valley Middle School, the Stonehurst Elementary School, and the Roscoe Elementary School. Several project sites are also located within one-fourth mile of a school.

The EIR will include a detailed evaluation of the potential project-related impacts related to storage, transport, and use of chlorine including impacts on schools, and will recommend feasible mitigation measures to minimize potential impacts. This impact is anticipated to be less than significant with incorporation of standard mitigation measures.

d) Section 65962.5 of the California Government Code requires Department of Toxic Substances Control to compile and update a list of hazardous materials sites also known as the “Cortese List.” One of the proposed project sites, the Sun Valley Middle School, is listed on the Cortese List for two cases of leaking underground storage tanks (LUSTs), both involving diesel fuel (EDR, 2002). Remedial actions were taken and completed for one case, which was closed in 1996. The second case, which involved soil contamination, appears to be currently under review. The proposed project may involve excavation at portions of the site that have been affected by these LUSTs. If contaminated soil is encountered during project construction, it would be disposed of in compliance with applicable regulations at approved disposal sites. This impact is anticipated to be less than significant with incorporation of standard mitigation measures.

e) There are two public airports located in the vicinity of the project area. Burbank-Glendale-Pasadena Airport is located to the southeast of the project area, and is adjacent to one of the proposed project sites. The Whiteman Airpark is located to the northwest of the project area, and is approximately 0.7 mile from the closest project site. However, the project does not involve construction of housing or creation of long-term employment and therefore would not result in a permanent placement of people near these public airports. Furthermore, the project does not involve structures of significant height that might interfere with the operation of the airports or air traffic. Therefore, the project would not result in exposure of people residing or working in the project area to safety hazards associated with the airports. This impact is less than significant.

f) The project sites are not located within 2 miles of a private airstrip. No impacts would occur.

g) During construction of the project, lane or road closures may be necessary for installation of project facilities in roadways. Restricted access to properties in the vicinity of the construction sites would be temporary, and would be addressed by advanced notification of local emergency service providers. The project does not involve structures which would result in long-term or substantial changes in access to any property. The project would not contribute to a significant increase in the potential for hazards within the area. Therefore, the project-related impacts on emergency response plans or emergency evacuation plans are anticipated to be less than significant as mitigated.

h) The project sites are located within an urban area, and no wildlands are located onsite or in the vicinity. No impacts would occur.

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

2.3.8 Hydrology and Water Quality

Would the project:

a) Violate any water quality standards or waste discharge requirements?	☒	☐	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☒	☐	☐	☐
g) Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒

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

Discussion:

a) The project involves collection, retention, and infiltration and/or reuse of stormwater. The project would result in a reduction of polluted stormwater runoff entering the Los Angeles River, and therefore is expected to have a beneficial impact on surface water quality.

The project sites are located within an urban area currently developed with commercial, industrial, and residential uses. Therefore stormwater collected from the area may contain pollutants, including but not limited to coliform bacteria, heavy metals, and hydrocarbons. Some of the pollutants would be removed in retention basins and stormwater separation devices to be installed as part of the project. However, further investigation and consultation with the Los Angeles Regional Water Quality Control Board is required to ensure that the stormwater used to recharge the groundwater basin would not substantially degrade groundwater quality or violate water quality standards.

In addition, recharge of groundwater in the project area may have an impact on the existing volatile organic compound contamination plume at the San Fernando Valley Superfund Sites, which include the southeastern portion of the project area and extends to the southeast and down-gradient from the project area. The U.S. Environmental Protection Agency (EPA) and regional and local agencies are monitoring the groundwater contamination at the Superfund Sites and implementing remedial measures, including pumping and treating the groundwater. The proposed project also proposes infiltration of stormwater upstream of the Bradley Landfill. The impacts of stormwater infiltration on groundwater levels and quality in relation to the landfill also require further analysis.

The EIR will include a detailed evaluation of the potential project-related impacts on groundwater and surface water quality, and will recommend feasible mitigation measures to minimize potential impacts as appropriate. This impact may be potentially significant.

b) The project involves infiltration of stormwater runoff into the groundwater basin. The project would increase groundwater recharge by conserving stormwater which would otherwise be lost to the Los Angeles River as surface runoff. Therefore, the project is expected to increase aquifer volume and raise the local groundwater table level. This would be a beneficial impact with respect to groundwater supply. No adverse impacts on aquifer volume or the local groundwater table level would occur.

c) and d)

The project involves construction of new structures and modifications to existing facilities to alter the existing drainage pattern of the project area for the purpose of reducing runoff water and minimizing flooding problems. The new structures and modifications would be designed to collect, retain, and infiltrate or reuse stormwater. Implementation of the project would decrease the rate and amount of surface runoff and the potential for erosion or siltation on- or off-site. Therefore, the project is expected to improve the existing drainage pattern in the Sun Valley Watershed. However, the EIR will include a detailed evaluation of the potential project-related impacts associated with the alteration of the existing drainage pattern. This impact is expected to be less than significant.

e) The main objective of the project is to alleviate flooding problems within the Sun Valley Watershed by collecting, retaining, and infiltrating or reusing stormwater. Therefore, the project would have a beneficial impact on stormwater drainage systems. No adverse impacts would occur.

f) See item a) above. This impact may be potentially significant.

g) Portions of the project area are located within the 100-year floodplain. However, the project does not involve construction of housing. Therefore, no impacts would occur.

h) Portions of the project area are located within the 100-year floodplain. The project involves construction of new structures and modifications to existing facilities for the purpose of reducing runoff water and flooding within the Sun Valley Watershed. The new structures and modifications would be designed to collect, retain, and infiltrate or reuse stormwater runoff, and therefore would impede or redirect flood flows in a controlled manner. Therefore, the project is expected to have a beneficial impact with respect to flooding. However, the EIR will include a detailed evaluation of the potential project-related environmental impacts associated with redirecting flood flows, and will recommend mitigation measures to minimize potential impacts as feasible and appropriate. This impact is anticipated to be less than significant.

i) and j)

The project area is located approximately 15 miles inland from the Pacific Ocean, and therefore there is no risk of tsunami in the area. No mudflow hazards have been identified for the project area. Hansen Dam and Lake are located immediately north of the project area. The project area would be subject to inundation in case of failure of Hansen Dam or a seiche at Hansen Lake. However, the proposed project does not involve construction of housing or employment centers and therefore would not result in exposure of people or structures to a significant risk from Hansen Dam/Lake. No impacts would occur.

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

2.3.9 Land Use and Planning

Would the project:

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

Discussion:

a) The project does not involve construction of roads, large structures, or new easements which could disrupt the physical arrangement of an established community or isolate an existing land use. No impacts would occur.

b) The project would not conflict with any applicable land use plan, policy, or regulation, including the General Plan and the Planning and Zoning Code of the City of Los Angeles. The project would be consistent with the local Community Plan policy to provide for the reclamation and reuse of exhausted gravel pits. No adverse impacts would occur.

c) The project sites are located in an urban area and are currently developed with commercial, industrial, and residential uses. No habitat conservation plans or natural community conservation plans have been implemented or are planned for the project area. No impacts would occur.

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

2.3.10 Mineral Resources

Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☒	☐	☐	☐
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☒	☐	☐	☐

Discussion:

a) and b)

According to the Sun Valley Community Plan (City of Los Angeles, 1999a), the Sun Valley-La Tuna Canyon Community area incorporates the highest concentration of mineral processing facilities in Los Angeles, with rock and gravel mining operations as well as cement and concrete processing. Portions of the Sun Valley Community are located within Mineral Resource Zone 2 (MRZ-2) as designated by the California Division of Mines and Geology (now California Geological Survey). The MRZ-2 zone designation indicates an area where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood of their presence exists. The Sun Valley Community Plan delineates active and historical gravel mining areas as "Existing Rock and Gravel Districts - 1977." The Sun Valley Community Plan establishes the following policy with respect to the area's sand and gravel resources:

"The utilization of sand and gravel areas shall be conducted in such a way as to conserve sand and gravel resources for future availability and use, minimize the impact of extractive activities upon residential and commercial areas, and provide for the reclamation and reuse of exhausted pits."

The proposed project involves reuse of gravel pits for stormwater retention and infiltration and for recreation purposes as part of a multi-objective solution to the flooding problems in the Sun Valley Watershed. Among the four gravel pits proposed for use by the project, Cal Mat Pit, Sheldon Pit, and Strathern Pit are exhausted gravel pits where gravel extraction operations have ceased. These exhausted gravel pits that would be affected by the proposed project are currently used as disposal sites for inert wastes (CalMat and Strathern Pits) and gravel washwater (Sheldon Pit) generated by local gravel processing operations. In the absence of the proposed project, these exhausted gravel pits would continue to be used as landfills. Therefore, use of these exhausted gravel pits by the proposed project would not result in the loss of available gravel resources. The project would be consistent with the local Community Plan policy to provide for the reclamation and reuse of exhausted gravel pits.

The Boulevard Pit is an actively mined gravel pit. According to the Sun Valley Community Plan (City of Los Angeles, 1999a), existing gravel resources in the Sun Valley Community are anticipated to be exhausted by the year 2008. The proposed use of this pit for the project may have an impact on the availability of gravel resources. The EIR will include a detailed evaluation of potential project-related impacts on the area's gravel resources, and will recommend mitigation measures to minimize potential impacts as feasible and appropriate. This impact may be potentially significant.

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

2.3.11 Noise

Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion:

a) The City of Los Angeles Municipal Code (LAMC) Section 41.40 prohibits construction, repair, or excavation work that involves the use of power driven equipment between the hours of 9:00 PM and 7:00 AM without permission. LAMC Section 112.05 requires noise levels generated by construction equipment within a residential zone to not exceed 75 dBA at a distance of 50 feet from the source between the hours of 10:00 PM and 7:00 AM. The City's General Plan Noise Element (1999b) establishes noise and land use compatibility guidelines.

Construction of the project may cause a temporary increase in ambient noise levels due to the use of heavy equipment and vehicles for grading and other construction activities. Some of the construction activities would take place in the vicinity of sensitive receptors to noise, including schools. Noise impacts due to project construction would be temporary and limited to normal working days and hours. However, the EIR will include a detailed evaluation of the potential project-related noise impacts associated with construction activities in relation to local standards and regulations, and will recommend mitigation measures as appropriate and feasible. This impact is anticipated to be less than significant as mitigated.

b) The construction of the project may generate groundborne vibration or groundborne noise due to the use of pile drivers and other construction equipment. Some of the construction activities would take place in the vicinity of sensitive receptors to noise, including schools. Noise impacts due to project construction would be temporary. However, the EIR will include a detailed evaluation of the potential project-related noise impacts associated with construction activities, and will recommend mitigation measures as appropriate and feasible. This impact is anticipated to be less than significant as mitigated.

c) Once constructed, noise associated with the project would be limited to the operation of pumps and occasional maintenance activities. Depending on the location of the pumps, mitigation such as acoustical enclosures could be implemented. This impact is anticipated to be less than significant as mitigated.

d) Construction of the project may cause a temporary increase in ambient noise levels due to the use of heavy equipment and vehicles for grading and other construction activities. Some of the construction activities would take place in the vicinity of sensitive receptors to noise, including schools. The EIR will include a detailed evaluation of potential project-related noise impacts associated with construction activities, and will recommend feasible mitigation measures to minimize potential impacts. This impact may be potentially significant.

e) There are two public airports located in the vicinity of the project area. Burbank-Glendale-Pasadena Airport is located to the southeast of the project area, and is adjacent to one of the proposed project sites. The Whiteman Airpark is located to the northwest of the project area, and is approximately 0.7 mile from the closest project site. The project does not involve construction of housing or creation of long-term employment. Therefore, the project would not expose people residing in the project area to excessive noise levels associated with airports. Workers involved with the construction of the project could be temporarily exposed to some airport noise. However, due to the distances involved and the limited duration of exposure, this impact is less than significant.

f) No private airstrip is located within the vicinity of the project sites. Therefore, no impacts would occur.

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.3.12 Population and Housing				
Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion:

a) The proposed project does not involve construction of new homes or businesses and does not include construction of new, potentially growth-inducing, infrastructure such as roads or potable water or wastewater systems. Therefore, the project would not, either directly or indirectly, induce substantial population growth in the area. No impacts would occur.

b) No housing would be displaced by the proposed project. Therefore, no impacts would occur.

c) No individuals would be displaced by the proposed project. Therefore, no impacts would occur.

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

2.3.13 Public Services

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	☐	☐	☐	☒
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☒	☐	☐	☐
iv) Parks?	☐	☐	☒	☐
v) Other public facilities?	☐	☐	☐	☒

Discussion:

a)-i) Fire protection and emergency medical services for the project area are provided by the Los Angeles Fire Department (LAFD). The project area is served by LAFD Fire Station (FS) 66 (5320 Tujunga Avenue, North Hollywood), FS 77 (8943 Glenoaks Boulevard, Sun Valley) and FS 89 (7063 Laurel Canyon Boulevard, North Hollywood). The project does not involve construction of housing or other structures that would result in an substantial increase in the demand for fire protection or emergency medical services. The project would not substantially increase fire hazards in the area. Therefore, the project is expected to be adequately served by existing resources of LAFD, and would not require new or physically altered facilities for fire protection or emergency medical services. No impacts would occur.

a)-ii) Police protection for the project area is provided by the Los Angeles Police Department (LAPD) Foothill Community Police Station (12760 Osborne Street, Pacoima) and North Hollywood Community Police Station (11640 Burbank Blvd., North Hollywood). The project would not result in an increase in residential, commercial, or industrial area, and is not expected to result in an increased demand for security or calls for police services. Therefore, the project is expected to be adequately served by existing resources of LAPD, and would not require new or physically altered facilities for police protection. No impacts would occur.

a)-iii) The project area is located in District B of the Los Angeles Unified School District (LAUSD). The proposed project includes physical alterations to portions of several LAUSD schools including Sun Valley Middle School, Stonehurst Elementary School, and Roscoe Elementary School. Construction of the proposed stormwater retention structures at these schools may have significant environmental impacts with respect to some of the issue areas marked in Section 2.1. The EIR will include a detailed evaluation of potential project-related impacts in those issue areas, and will recommend feasible mitigation measures to minimize potential impacts. This impact may be potentially significant.

a)-iv) The project includes construction of new recreational facilities and modifications to existing facilities as part of the multi-purpose solution to the flooding problems in the Sun Valley Watershed. Construction activities could temporarily reduce access to existing parks and increase use at other facilities. The impacts would be temporary and less than significant.

a)-v) The project does not involve or result in construction of housing or employment centers and would not induce population growth. No public facilities or services other than schools and parks would be affected by the construction or operation of the project. No impacts would occur.

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

2.3.14 Recreation

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☒	☐	☐	☐

Discussion:

a) The project includes construction of new recreational facilities and modification to existing ones as a part of the multi-purpose solution to the flooding problems in the Sun Valley Watershed. Operation of the project is expected to have a beneficial impact on recreation by providing additional recreational facilities for the communities in the project area. During modification of existing recreational facilities at the school sites, a minimal increase in the use of other existing recreational facilities in the area may occur. However, such increase in usage would be short-term and is not expected to cause or accelerate a substantial physical deterioration of those facilities. Therefore, project-related impacts on existing recreational facilities would be less than significant.

b) The project includes construction of new recreational facilities and modifications to existing ones as part of the multi-purpose solution to the flooding problems in the Sun Valley Watershed. The proposed construction and modification of recreational facilities may have significant environmental impacts with respect to some of the issue areas marked in Section 2.1. The EIR will include a detailed evaluation of potential project-related impacts in those issue areas, and will recommend feasible mitigation measures to minimize potential impacts. This impact may be potentially significant.

2.3.15 Transportation and Traffic

Would the project:

a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☒	☐	☐	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☒	☐	☐	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒

	Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e)	Result in inadequate emergency access?	☐	☐	☒	☐
f)	Result in inadequate parking capacity?	☐	☐	☒	☐
g)	Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

Discussion:

a) and b)

The project would not result in any permanent change to the existing roadways or in any permanent increase in traffic. During construction of the project, lane or road closures may be necessary for installation of project facilities in roadways. In addition, short-term increases in traffic may occur due to construction vehicle traffic for the project.

Therefore, construction of the project may cause an increase in traffic and/or loss of capacity due to lane or road closures, and may result in a temporary exceedance of the level of service standard established by the Los Angeles County Metropolitan Transportation Authority (MTA) Congestion Management Program. The EIR will include a detailed evaluation of project-related impacts on traffic and will recommend feasible mitigation measures to minimize potential impacts. This impact may be potentially significant, but would be temporary and localized.

c) There are two public airports located in the vicinity of the project area. Burbank-Glendale-Pasadena Airport is located to the southeast of the project area, and is adjacent to one of the proposed project sites. The Whiteman Airpark is located to the northwest of the project area, and is approximately 0.7 mile from the closest project site. The project does not involve structures of significant height which would result in a change in air traffic location. The project would not result in any increase in air traffic levels. No impacts would occur.

d) The project would not result in any permanent change to the design, location, or sizes of existing roadways. During construction of the project, lane or road closures may be necessary for installation of project facilities in roadways. These impacts would be temporary and less than significant. The proposed project may involve signage and landscaping which would be visible from the roadways. Such landscaping and signage would be designed to maintain vehicular sight lines. Therefore, the project would not result in a substantial increase in traffic hazards. No impacts would occur.

e) During construction of the project, lane or road closures may be necessary for installation of project facilities in roadways. The project would not result in long-term or substantial changes in access to any property. Therefore, project-related impacts on emergency access would be less than significant.

f) The proposed project may involve installation of stormwater infiltration structures in parking lots. During construction of these structures, short-term impacts on parking capacity may occur. However, these structures would be constructed below the surface and would have no permanent impact on parking capacity. The project may create a need for additional parking facilities as part of the creation of new or expanded recreational facilities. Since the design of these facilities would include all necessary parking, project-related impacts on parking capacity would be less than significant.

g) Project-related impacts on transportation would be limited to project construction. The project would not result in any long-term increase in traffic or in a permanent change in existing transportation systems. Therefore, the project would not conflict with adopted policies, plans, or programs supporting alternative transportation. No impacts would occur.

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

2.3.16 Utilities and Service Systems

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☒	☐	☐	☐
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☒	☐	☐	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statues and regulations related to solid waste?	☐	☐	☐	☒

Discussion:

a) Stormwater runoff collected as part of the project would be infiltrated into the ground for groundwater recharge or reused for non-potable purposes at local facilities. Therefore, the project would not require any new connections to the existing sewer system and would have no impact on existing wastewater treatment systems. No impacts would occur.

b) Stormwater runoff collected as part of the project may require treatment prior to reuse or recharge into groundwater. Therefore, the project may result in the installation of new small-scale wastewater treatment structures. Installation of these structures may have significant environmental impacts with respect to some of the issue areas marked in Section 2.1. The EIR will include a detailed evaluation of potential project-related impacts in those issue areas, and will recommend feasible mitigation measures to minimize potential impacts. This impact may be potentially significant.

c) Construction of new stormwater drainage facilities is one of the components of the project, whose objective is to alleviate flooding problems in the Sun Valley Watershed. Construction of these facilities may have significant environmental impacts with respect to some of the issue areas marked in Section 2.1. The EIR will include a detailed evaluation of the potential project-related environmental impacts in those issue areas, and will recommend feasible mitigation measures to minimize potential impacts. This impact may be potentially significant.

d) The Los Angeles Department of Water and Power (LADWP) is the water service provider for the project area. The project includes reuse of collected stormwater for non-potable uses such as irrigation of a golf course and industrial uses. The project would not require any connection to the existing potable water system. Therefore, no new or expanded water supply sources or entitlements would be required. No impacts would occur.

e) Stormwater runoff collected for the project would be infiltrated into the ground for groundwater recharge or reused for non-potable purposes at local facilities. Therefore, the project would not require any new connections to the existing sewer system and would have no impact on the capacity of existing wastewater treatment systems. No impacts would occur.

f) Excavation, demolition, and other construction activities related to the project would generate solid waste such as excavated soil, concrete, and asphalt. Solid waste generated during the operational phase of the project would be limited to sediments removed periodically from the stormwater collection facilities during maintenance.

The nearest active landfill to the project area is the Bradley Landfill and Recycling Center, located at 9227 Tujunga Avenue in the Sun Valley Community. Bradley Landfill is permitted to accept up to 10,000 tons per day, seven days per week (Waste Management, 2001). The facility accepts non-hazardous Class 3 and inert wastes. Other active landfills in the area accepting municipal wastes include Chiquita Canyon Landfill in Valencia and Sunshine Canyon Landfill in Sylmar.

Based on the limited volume of solid waste that would be generated by the project and the long term phasing of project construction, it is expected that solid waste disposal could be accommodated by Bradley Landfill or other landfills in the area. Therefore, project-related impacts related to landfill capacity would be less than significant. Benefits of the project related to solid waste will also be discussed in the EIR. These include a reduction in landfilled greenwaste as a result of increased composting within the watershed.

g) The California Integrated Waste Management Board (CIWMB) is responsible for managing California's solid waste stream. The City of Los Angeles Environmental Affairs Department is the Solid Waste Local Enforcement Agency (LEA) for the City of Los Angeles, which is mandated by the CIWMB to enforce state and local minimum standards for solid waste collection, transfer, processing, and disposal (Los Angeles, 2002). The project would comply with all federal, state, and local statutes and regulations related to solid waste, including requirements for integrated waste management (e.g. recycling). No impacts would occur.

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.3.17 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?	☒	☐	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable ("cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, effects of other current projects, and the effects of probable future projects.)?	☒	☐	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐

Discussion:

a) The proposed project sites are located in an urbanized area. The proposed project is not expected to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, or threaten to eliminate a plant or animal community. As a part of EIR preparation, a biological site survey will be conducted to determine whether any endangered or rare animal or plant species are present on the proposed project sites. Site surveys will also be conducted to determine whether significant historical, archaeological, and paleontological resources are present at the project sites. The potential project-related impacts on rare or endangered species and historical or pre-historical resources are unknown at this time. The EIR will include a detailed analysis of the significance of these impacts. These impacts may be potentially significant.

b) The proposed project may create temporary cumulatively considerable air quality, noise, and traffic impacts related to construction activities when considered with other planned development. The project may also have a cumulatively considerable impact on groundwater quality in association with the existing Superfund sites in the San Fernando Valley groundwater basin. The EIR will include a detailed analysis of the significance of these potential cumulative impacts. These impacts may be potentially significant.

c) The proposed project may have direct or indirect adverse impacts on humans. Potential temporary impacts on humans resulting from the proposed project are related to the following environmental issue areas: air quality, noise,, and transportation and traffic. Other potential impact areas include geology and soils, hazards and hazardous materials, hydrology and water quality. The EIR will include a detailed analysis of the significance of these impacts. These impacts may be potentially significant.

Section 3
References

3.1 REFERENCES

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3.2 PREPARERS OF THE INITIAL STUDY

This Initial Enviornmental Study was prepared at MWH by:

Akiko Kawaguchi, Project Scientist
Sarah Garber, CEQA Task Manager

Summary of Oral Comments Received at the Public Scoping Meeting

A public scoping meeting was held on November 20, 2002 at the Sun Valley Middle School auditorium for the Sun Valley Watershed Management Plan Program EIR as a part of the town hall meeting for the Watershed Management Plan. Representatives from the County of Los Angeles Department of Public Works, the consulting firm MWH, and TreePeople presented the project, and a representative from MWH presented on the environmental review process.

The following oral comments and questions were received during the meeting:

- Supports the project.
- There should be more soccer fields.
- Is there any coordination between the other supervisors districts and this one?
- Will we really have lakes year-round? If so, how will the water be kept year-round?
- Concerned about the West Nile Virus.
- Water should be stored behind Hansen Dam.
- Supports the stakeholders group.
- Who will be the ultimate authority with what happens with the watershed?
- Will a federal agency have ultimate authority with what happens (e.g., U.S. Army Corps)?
- What is the timetable for the EIR and to whom can I suggest ideas for watershed management techniques?
- Was the graph (cost benefit) to scale, and was it with regards to just the Phase 1 projects or the overall plan?
- Where are we in the timeline right now (as shown on the graph in the presentation)?
- How much will the project cost?
- How many other agencies have committed to funding the project?
- This project is one of the greatest things to happen in Los Angeles. This will hopefully help us move away from concrete rivers.
- Is there enough water to fill Hansen Dam?

In addition, the following written comment was received on the comment card, which was provided to each attendant of the meeting:

- Does the landfill have plans to close?
- The project should attract wildlife. Supports a lake or a wetland with the old landfill and the Sun Valley Middle School and Tuxford Green projects.

SOUTHERN CALIFORNIA

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December 5, 2002

Mr. Vik Bapna
Los Angeles County Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

RE: **Comments on the Notice of Preparation for a Draft Environmental Impact Report for the Sun Valley Watershed Management Plan – SCAG No. I 20020599**

Dear Mr. Bapna:

Thank you for submitting the **Notice of Preparation for a Draft Environmental Impact Report for the Sun Valley Watershed Management Plan** to SCAG for review and comment. As areawide clearinghouse for regionally significant projects, SCAG reviews the consistency of local plans, projects, and programs with regional plans. This activity is based on SCAG's responsibilities as a regional planning organization pursuant to state and federal laws and regulations. Guidance provided by these reviews is intended to assist local agencies and project sponsors to take actions that contribute to the attainment of regional goals and policies.

We have reviewed the **Notice of Preparation** and have determined that the proposed Project is regionally significant per SCAG mandates for regionally significant projects that directly relate to policies and strategies contained in the Regional Comprehensive Plan and Guide (RCPG) and Regional Transportation Plan (RTP). The proposed Project considers the implementation of a flood control project. CEQA requires that EIRs discuss any inconsistencies between the proposed project and applicable general plans and **regional plans (Section 15125 [d])**. If there are inconsistencies, an explanation and rationalization for such inconsistencies should be provided.

Policies of SCAG's Regional Comprehensive Plan and Guide and Regional Transportation Plan, which may be applicable to your project, are outlined in the attachment. **We expect the Draft EIR to specifically cite the appropriate SCAG policies and address the manner in which the Project is consistent with applicable core policies or supportive of applicable ancillary policies. Please use our policy numbers to refer to them in your Draft EIR. Also, we would encourage you to use a side-by-side comparison of SCAG policies with a discussion of the consistency or support of the policy with the Proposed Project.**

Please provide a minimum of 45 days for SCAG to review the Draft EIR when this document is available. If you have any questions regarding the attached comments, please contact me at (213) 236-1867. Thank you.

Sincerely,

JEFFREY M. SMITH, AICP
Senior Regional Planner
Intergovernmental Review

COMMENTS ON THE PROPOSAL TO DEVELOP A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE SUN VALLEY WATERSHED MANAGEMENT PLAN SCAG NO. I 20020599

PROJECT DESCRIPTION

The proposed Project is a watershed management plan, which provides a blueprint for a multi-purpose flood control program to solve the local flooding problem in the Sun Valley Watershed area, while increasing water conservation, recreational opportunities, and wildlife habitat, and reducing stormwater pollution.

CONSISTENCY WITH REGIONAL COMPREHENSIVE PLAN AND GUIDE POLICIES

The **Growth Management Chapter (GMC)** of the Regional Comprehensive Plan and Guide (RCPG) contains the following policies that are particularly applicable and should be addressed in the Draft EIR for the Sun Valley Watershed Management Plan.

3.03 *The timing, financing, and location of public facilities, utility systems, and transportation systems shall be used by SCAG to implement the region's growth policies.*

GMC POLICIES RELATED TO THE RCPG GOAL TO IMPROVE THE REGIONAL QUALITY OF LIFE

The Growth Management goals to attain mobility and clean air goals and to develop urban forms that enhance quality of life, that accommodate a diversity of life styles, that preserve open space and natural resources, and that are aesthetically pleasing and preserve the character of communities, enhance the regional strategic goal of maintaining the regional quality of life. The evaluation of the proposed project in relation to the following policies would be intended to provide direction for plan implementation, and does not allude to regional mandates.

3.18 *Encourage planned development in locations least likely to cause environmental impact.*

3.20 *Support the protection of vital resources such as wetlands, groundwater recharge areas, woodlands, production lands, and land containing unique and endangered* *plants and animals.*

3.21 *Encourage the implementation of measures aimed at the preservation and protection of recorded and unrecorded cultural resources and archaeological sites.*

3.22 *Discourage development, or encourage the use of special design requirements, in areas with steep slopes, high fire, flood, and seismic hazards.*

3.23 *Encourage mitigation measures that reduce noise in certain locations, measures aimed at preservation of biological and ecological resources, measures that would reduce exposure to seismic hazards, minimize earthquake damage, and to develop emergency response and recovery plans.*

GMC POLICIES RELATED TO THE RCPG GOAL TO PROVIDE SOCIAL, POLITICAL, AND CULTURAL EQUITY

The Growth Management Goal to develop urban forms that avoid economic and social polarization promotes the regional strategic goal of minimizing social and geographic disparities and of reaching equity among all segments of society. The evaluation of the proposed project in relation to the policy stated below is intended guide direction for the accomplishment of this goal, and does not infer regional mandates and interference with local land use powers.

3.27 *Support local jurisdictions and other service providers in their efforts to develop sustainable communities and provide, equally to all members of society, accessible and effective services such as: public education, housing, health care, social services, recreational facilities, law enforcement, and fire protection.*

REGIONAL TRANSPORTATION PLAN

The **Regional Transportation Plan (RTP)** also has goals, objectives, policies and actions pertinent to this proposed project. This RTP links the goal of sustaining mobility with the goals of fostering economic development, enhancing the environment, reducing energy consumption, promoting transportation-friendly development patterns, and encouraging fair and equitable access to residents affected by socio-economic, geographic and commercial limitations. Among the relevant goals, objectives, policies and actions of the RTP are the following:

Core Regional Transportation Plan Policies

4.02 Transportation investments shall mitigate environmental impacts to an acceptable level.

4.04 Transportation Control Measures shall be a priority.

4.16 Maintaining and operating the existing transportation system will be a priority over expanding capacity.

AIR QUALITY CHAPTER CORE ACTIONS

The **Air Quality Chapter** core actions related to the proposed project includes:

5.07 Determine specific programs and associated actions needed (e.g., indirect source rules, enhanced use of telecommunications, provision of community based shuttle services, provision of demand management based programs, or vehicle-miles-traveled/emission fees) so that options to command and control regulations can be assessed.

5.11 Through the environmental document review process, ensure that plans at all levels of government (regional, air basin, county, subregional and local) consider air quality, land use, transportation and economic relationships to ensure consistency and minimize conflicts.

OPEN SPACE CHAPTER ANCILLARY GOALS

Public Health and Safety

9.04 Maintain open space for adequate protection of lives and properties against natural and man-made hazards.

9.05 Minimize potentially hazardous developments in hillsides, canyons, areas susceptible to flooding, earthquakes, wildfire and other known hazards, and areas with limited access for emergency equipment.

9.06 Minimize public expenditure for infrastructure and facilities to support urban type uses in areas where public health and safety could not be guaranteed.

Resource Protection

9.08 Develop well-managed viable ecosystems or known habitats of rare, threatened and endangered species, including wetlands.

WATER QUALITY CHAPTER RECOMMENDATIONS AND POLICY OPTIONS

The **Water Quality Chapter** core recommendations and policy options relate to the two water quality goals: to restore and maintain the chemical, physical and biological integrity of the nation's water; and, to achieve and maintain water quality objectives that are necessary to protect all beneficial uses of all waters.

11.02 Encourage "watershed management" programs and strategies, recognizing the primary role of local governments in such efforts.

11.05 Support regional efforts to identify and cooperatively plan for wetlands to facilitate both sustaining the amount and quality of wetlands in the region and expediting the process for obtaining wetlands permits.

11.07 Encourage water reclamation throughout the region where it is cost-effective, feasible, and appropriate to reduce reliance on imported water and wastewater discharges. Current administrative impediments to increased use of wastewater should be addressed.

CONCLUSIONS

All feasible measures needed to mitigate any potentially negative regional impacts associated with the proposed project should be implemented and monitored, as required by CEQA.

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

Roles and Authorities

THE SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS (SCAG) is a ***Joint Powers Agency*** established under California Government Code Section 6502 et seq. Under federal and state law, SCAG is designated as a Council of Governments (COG), a Regional Transportation Planning Agency (RTPA), and a Metropolitan Planning Organization (MPO). SCAG's mandated roles and responsibilities include the following:

SCAG is designated by the federal government as the Region's ***Metropolitan Planning Organization*** and mandated to maintain a continuing, cooperative, and comprehensive transportation planning process resulting in a Regional Transportation Plan and a Regional Transportation Improvement Program pursuant to 23 U.S.C. '134, 49 U.S.C. '5301 et seq., 23 C.F.R. '450, and 49 C.F.R. '613. SCAG is also the designated ***Regional Transportation Planning Agency***, and as such is responsible for both preparation of the Regional Transportation Plan (RTP) and Regional Transportation Improvement Program (RTIP) under California Government Code Section 65080 and 65082 respectively.

SCAG is responsible for developing the demographic projections and the integrated land use, housing, employment, and transportation programs, measures, and strategies portions of the ***South Coast Air Quality Management Plan***, pursuant to California Health and Safety Code Section 40460(b)-(c). SCAG is also designated under 42 U.S.C. '7504(a) as a ***Co-Lead Agency*** for air quality planning for the Central Coast and Southeast Desert Air Basin District.

SCAG is responsible under the Federal Clean Air Act for determining ***Conformity*** of Projects, Plans and Programs to the State Implementation Plan, pursuant to 42 U.S.C. '7506.

Pursuant to California Government Code Section 65089.2, SCAG is responsible for ***reviewing all Congestion Management Plans (CMPs) for consistency with regional transportation plans*** required by Section 65080 of the Government Code. SCAG must also evaluate the consistency and compatibility of such programs within the region.

SCAG is the authorized regional agency for ***Inter-Governmental Review*** of Programs proposed for federal financial assistance and direct development activities, pursuant to Presidential Executive Order 12,372 (replacing A-95 Review).

SCAG reviews, pursuant to Public Resources Code Sections 21083 and 21087, Environmental Impacts Reports of projects of regional significance for consistency with regional plans [California Environmental Quality Act Guidelines Sections 15206 and 15125(b)].

Pursuant to 33 U.S.C. '1288(a)(2) (Section 208 of the Federal Water Pollution Control Act), SCAG is the authorized ***Areawide Waste Treatment Management Planning Agency***.

SCAG is responsible for preparation of the ***Regional Housing Needs Assessment***, pursuant to California Government Code Section 65584(a).

SCAG is responsible (with the Association of Bay Area Governments, the Sacramento Area Council of Governments, and the Association of Monterey Bay Area Governments) for preparing the ***Southern California Hazardous Waste Management Plan*** pursuant to California Health and Safety Code Section 25135.3.

Revised July 2001

WMD

South Coast
Air Quality Management District
AQMD
21865 E. Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 • http://www.aqmd.gov

November 13, 2002

Mr. Vik Bapna
Los Angeles County Dept. of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

Dear Mr. Bapna:

Notice of Preparation of an Environmental Impact Report for
Sun Valley Watershed Management Plan

The South Coast Air Quality Management District (AQMD) appreciates the opportunity to comment on the above-mentioned document. The AQMD's comments are recommendations regarding the analysis of potential air quality impacts from the proposed project that should be included in the Draft Environmental Impact Report (EIR).

Air Quality Analysis

The AQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. The AQMD recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analysis. Copies of the Handbook are available from the AQMD's Subscription Services Department by calling (909) 396-3720.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project. Air quality impacts from both construction and operations should be considered. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, that is, sources that generate or attract vehicular trips should be included in the evaluation. An analysis of all toxic air contaminant impacts due to the decommissioning or use of equipment potentially generating such air pollutants should also be included.

Mitigation Measures

In the event that the project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures be utilized during project construction and operation to minimize or eliminate significant adverse air quality impacts. To assist the Lead Agency with identifying possible mitigation measures for the project, please refer to Chapter 11 of the AQMD CEQA Air Quality Handbook for sample air quality mitigation measures. Additionally, AQMD's Rule 403 – Fugitive Dust, and the Implementation Handbook contain numerous measures for controlling construction-related emissions that should be considered for use as CEQA mitigation if not otherwise required. Pursuant to state CEQA Guidelines §15126.4 (a)(1)(D), any impacts resulting from mitigation measures must also be discussed.

Data Sources

AQMD rules and relevant air quality reports and data are available by calling the AQMD's Public Information Center at (909) 396-2039. Much of the information available through the Public Information Center is also available via the AQMD's World Wide Web Homepage (http://www.aqmd.gov).

The AQMD is willing to work with the Lead Agency to ensure that project-related emissions are accurately identified, categorized, and evaluated. Please call Dr. Charles Blankson, Transportation Specialist, CEQA Section, at (909) 396-3304 if you have any questions regarding this letter.

Sincerely,

Steve Smith

Steve Smith, Ph.D.
Program Supervisor, CEQA Section
Planning, Rule Development and Area Sources

SS:CB:li

LAC021112-03LI
Control Number

WMD 979

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, REGIONAL PLANNING
IGR/CEQA BRANCH
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PHONE (213) 897-6536
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Flex your power!
Be energy efficient!

Mr. Vik Bapna
LA County Dept. of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA. 91802-1460

RE: IGR/CEQA # 021137NY
Sun Valley Watershed Management Plan

LA / Various locations

November 22, 2002

Dear Mr. Bapna:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the proposed development of Sun Valley Watershed Management Plan in Los Angeles County.

As such time there is a specific developer for the site, please include this office in the environmental review process.

We would like to remind you that any transportation of heavy construction equipment and/or materials which requires the use of oversized-transport vehicles on State highways will require a Caltrans transportation permit. We recommend that large size truck trips be limited to off-peak commute periods.

If you have any questions regarding this response, please call the Project Engineer/Coordinator Mr. Yerjanian at (213) 897-6536 and refer to IGR/CEQA # 021137NY.

Sincerely,

Stephen J. Buswell

STEPHEN J. BUSWELL
IGR/CEQA Branch Chief
Transportation Planning Office
Caltrans, District 7

WMD

STATE OF CALIFORNIA Gray Davis, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
(916) 657-5390 - Fax

November 21, 2002

Vik Bapna
Los Angeles County Department of Public Works
P.O. Box 1460
Alhambra, CA 91802-1460

RE: SCH# 2002111051 – Sun Valley Watershed Management Plan, City and County of Los Angeles

Dear Mr. Bapna:

The Native American Heritage Commission has reviewed the Notice of Preparation (NOP) regarding the above project. To adequately assess and mitigate project-related impacts on archaeological resources, the Commission recommends the following actions be required:

✓ Contact the appropriate Information Center for a record search to determine:
- If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources.
- If any known cultural resources have already been recorded on or adjacent to the APE.
- If the probability is low, moderate, or high that cultural resources are located in the APE.
- If a survey is required to determine whether previously unrecorded cultural resources are present.

✓ If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
- The final report containing site forms, site significance, and mitigation measurers should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure.
- The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.

✓ Contact the Native American Heritage Commission for:
- A Sacred Lands File Check. **Check Completed with negative results, 11/14/02**
- A list of appropriate Native American Contacts for consultation concerning the project site and to assist in the mitigation measures. **Native American Contacts List attached**

✓ Lack of surface evidence of archeological resources does not preclude their subsurface existence.
- Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5 (f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
- Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.
- Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5 (e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

Sincerely,

Rob Wood

Rob Wood
Environmental Specialist III
(916) 653-4040

CC: State Clearinghouse

NATIVE AMERICAN CONTACTS
Los Angeles County
November 21, 2002

Alfred L. Valenzuela
18678 Pad Court
Newhall, CA 91321
(661) 252-1486 Home
(661) 755-8314 Work

Chumash
Tataviam
Gabrielino
Kitanemuk
Vanyume ; Serrano

Jim Velasques
5776 42nd Street
Riverside, CA 92509
(909) 784-6660

Gabrielino
Kumeyaay

Gabrielino/Tongva Tribal Council of the Gabrielino Tongva Nation
501 Santa Monica Blvd., Suite 500
Santa Monica, CA 90401-2415
(310) 587-2203
(310) 587-2281 Fax

Gabrieleno Tongva

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regards to the cultural assessment for the proposed SCH# 2002111051 - Sun Valley Watershed Management Plan, City and County of Los Angeles.

NATIVE AMERICAN CONTACTS
Los Angeles County
November 21, 2002

Samuel H. Dunlap
P.O. Box 1391
Temecula, CA 92593
(909) 699-5544 (Voice)
(909) 262-9351 (Cell)
(909) 693-9196 FAX
Gabrielino
Cahuilla
Luiseno

Gabrielino Tongva Indians of California Tribal Council
Robert F. Dorame, Chairperson
PO Box 490
Bellflower, CA 90707
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Gabrielino Tongva

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John Valenzuela
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Tongva, Gabrielino
Vanyume; Serrano
Kitanemuk

Ti'At Society
Cindi Alvitre
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Gabrielino

Gabrieleno/Tongva Tribal Council
Anthony Morales, Chairperson
PO Box 693
San Gabriel, CA 91778
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Gabrieleno Tongva

Island Gabrielino Group
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Craig Torres
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This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regards to the cultural assessment for the proposed SCH# 2002111051 - Sun Valley Watershed Management Plan, City and County of Los Angeles.

WMD

Department of Water and Power the City of Los Angeles

December 6, 2002

Mr. Vic Bapna
Watershed Management Division
County of Los Angeles,
Department of Public Works
900 South Fremont Avenue
Alhambra, CA 91803-1331

Dear Mr. Bapna:

The Los Angeles Department of Water and Power (LADWP) has received the Los Angeles County Department of Public Works' (LACDPW) Notice of Preparation dated November 6, of a Draft Program Environmental Impact Report (EIR) for the Sun Valley Watershed Management Plan. As you are aware, LADWP has pledged its support for the project as it will feature water conservation and maximize the use of our local water resources. We are pleased that LACDPW is moving forward with the environmental documentation to evaluate any potential environmental effects that may result from the project.

The Sun Valley Watershed overlies the San Fernando Basin that provides approximately 15 percent of Los Angeles' water supply, or enough water to serve approximately 450,000 people. Although LADWP is hopeful that the Sun Valley Watershed Management Plan will be successful and potentially augment our groundwater supplies, we must ensure the protection of our local groundwater resources. We are hopeful that with the proper design, treatment, and monitoring, this project can become a reality and offer an innovative solution for the beneficial use of our precious stormwater that is currently lost to the ocean while also being protective of groundwater quality.

LADWP welcomes the opportunity to review the Initial Environmental Study (IES) and would like to submit the following comments concerning the project and the potential environmental impacts that should be addressed in the draft EIR:

<u>Section 1.4 - Other Public Agencies whose Review and/or Approval May be Required</u>
The Cities of Glendale and Burbank should also be included as part of the review process. Both cities have groundwater rights in the San Fernando Basin that could be potentially impacted by the stormwater infiltration.

Section 1.6 - Project Description
The project description is very general and conceptual in nature. The project description in the EIR should be much more detailed and specifically describe the types of facilities, capital and infrastructure improvements, and operation and maintenance requirements necessary to achieve the various project goals. In addition, the project description should include a discussion of the proposed water quality monitoring program. Such a program will be necessary to monitor the long-term stormwater quality and ensure that the stormwater is of acceptable quality for the various proposed uses.

Section 1.6.1.1 - Stormwater Retention and/or Infiltration Facilities
It is implied that retention facilities will be designed to remove stormwater pollutants. Residential, commercial, and industrial land uses will most likely contain different mixtures and levels of contaminants. The EIR should specifically state the type of treatment, the contaminants that will be treated, and the expected level of treatment for the various project sites throughout the watershed.

Section 1.6.1.3 - Tujunga Wash Diversion and Infiltration at Hansen and Tujunga Spreading Grounds
Unfortunately, the Sheldon Pit has been excavated to a depth below the groundwater table resulting in exposed groundwater. The water level in the pit has been known to fluctuate significantly depending on the elevation of the groundwater table. The exposed groundwater represents a direct conduit for groundwater contamination that would need to be addressed and remediated if the pit were to be considered for a proposed project site. In addition, the use of the Sheldon Pit could also be subject to the Surface Water Treatment Rule pending California Department of Health Services review.

Section 1.6.1.4 - Stormwater Reuse Distribution System
As part of our water-recycling program, LADWP intends to make recycled water available for non-potable use to interested customers and facilities in the Sun Valley area including the Hansen Dam Golf Course and LADWP's Valley Generating Station. LACDPW should consult LADWP on any potential stormwater reuse distribution system to ensure there is no conflict of interest or redundant distribution system.

In addition, the IES states that the "Vulcan Gravel Processing Plant would use stormwater for gravel processing operations such as gravel washing". Vulcan currently disposes of gravel wash water into the Sheldon Pit. Because groundwater is exposed in the pit (see comments on Section 1.6.1.3 above), Vulcan may need to alter their wash water disposal location before the use of runoff would be allowed for gravel washing.

Section 2.3.8 - Hydrology and Water Quality

While the proposed project may have a beneficial impact on surface water quality by reducing the polluted stormwater runoff from entering the Los Angles River, it has not been ascertained that infiltrating stormwater will not impair groundwater quality. The project area will encompass residential, commercial, and industrial sites that could contain a wide variety of contaminants. Although the IES acknowledges that the stormwater may contain pollutants and may require treatment as part of the project, LADWP would like to reiterate the following concerns regarding potential impacts to the groundwater quality that should be addressed as part of the draft EIR:

- Evaluate and quantify the potential for short and long-term degradation of the San Fernando Basin groundwater quality resulting from the project;

- Identify the proposed water-quality standards that will be used as an acceptable baseline for the stormwater to ensure that groundwater quality is not degraded;

- Identify the anticipated water-quality pollutants and levels of concentration for residential, commercial, and industrial sites;

- Define the type and adequacy of the proposed treatment to remove the pollutants from the stormwater for infiltration and other beneficial uses;

- Define the proposed long-term sampling and water quality analysis program as part of the project to evaluate any impacts to groundwater quality;

- Define the long-term operation and maintenance plan to ensure the proper operation and function of the proposed project;

- Determine the impact (if any) of the infiltrated stormwater on the existing groundwater contamination plumes;

- Identify and determine the impact (if any) of potential contaminants within the soil matrix of the proposed project sites from contaminating the groundwater;

- Define a contingency plan in the event the project (or portions of) is required to be removed from service;

- Identify the mechanism or agency that will bear the responsibility for regulatory management and oversight of the project.

We appreciate LACDPW including us as part of the Sun Valley Stakeholder Group and look forward to working with LACDWP in completing the EIR and the future successful completion of the project.

Please feel free to contact Mr. Mario Acevedo, of my staff, at (213) 367-0932 if you have any questions.

Sincerely,

for Thomas M. Erb
Director of Water Resources

c: Ms. Julie Conboy, Los Angeles City Attorney's Office
Mr. Melvin Blevins, ULARA Watermaster
Mr. Mark Mackowski, ULARA Watermaster
Mr. Fred Lantz, City of Burbank
Mr. Don Froelich, City of Glendale
Mr. Michael Drennan, MWH
Ms. Vera Melnyk-Vecchio, DHS
Mr. Stefan Cajina, DHS
Mr. Dennis Dickerson, RWQCB
Ms. Wendy Phillips, RWQCB
Mr. Mario Acevedo, LADWP

Los Angeles Unified School District

ROY ROMER
Superintendent of Schools

ANGELO BELLOMO
Director,
Office of Environmental Health and Safety

Environmental Review File
Sun Valley Watershed Management Plan

December 10, 2002

Mr. Vik Bapna
Los Angeles County Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

SUBJECT: SUN VALLEY WATERSHED MANAGEMENT PLAN
NOTICE OF PREPARATION OF DRAFT PROGRAM EIR

Dear Mr. Bapna

Thank you for giving the Los Angeles Unified School District (LAUSD) the opportunity to comment on the Notice of Preparation for the County's Sun Valley Watershed Management Plan. The close proximity of **Stonehurst Elementary School, Roscoe Elementary School** and **SunValley Middle School** to the proposed project presents significant safety issues for students and school staff. The Initial Study for this Project states that the above schools "may have significant environmental impacts." The safety of school students and staff must be considered.

The following comments describe mitigation measures that will be required for protection of schools and walk routes during construction activity. Therefore, the measures set forth in these comments should be adopted as conditions of project approval to offset unmitigated impacts on the affected students, teachers, and support staff.

IMPACTS

<u>Air Quality</u>
Air quality is determined primarily be the type and amount of contaminants emitted into the atmosphere, the size and topography of the air basin, and its meteorological conditions. The South Coast Air Basin has low mixing heights and light winds which are conducive to the accumulation of air pollutants.

Air quality is measured by comparing contaminant levels in ambient air samples to national and state standards. These standards are set by the U.S. Environmental Protection Agency and the California Air Resources Board at levels determined to be protective of public health and welfare with an adequate margin of safety. National Ambient Air Quality Standards (NAAQS) were first authorized by the federal Clean Air Act of 1970. California Ambient Air Quality Standards

Pollution levels must be below these standards before a Basin can attain the standard. The NAAQS describe acceptable conditions. Air quality is considered in "attainment" if pollutant levels are below or equal to the standards continuously and exceed them more than once each year.

Construction activities for the proposed project would result in impacts on ambient air quality in the area of the three schools listed above. Students, teachers, and support staff can be considered as possible sensitive receptors to the resultant air pollution.

To ensure that effective mitigation is applied to reduce construction air pollutant impacts on the school, we ask that air pollution impacts be quantified, and reduces to a level of insignificance.

Noise

Noise created by grading activity may affect the three schools adjacent to the Sun Valley Watershed project. These construction activities include grading, earth moving, hauling, and use of heavy equipment. The California Environmental Quality Act requires that such impacts be quantified, and eliminated or reduced to a level of insignificance.

To ensure that effective mitigations are employed to reduce construction related noise impacts on District sites, we ask that the following language be included in the mitigation measures for noise.

> If the proposed mitigation measures do not reduce noise impacts to a level of insignificance, the project applicant shall develop new and appropriate measures to effectively mitigate construction related noise at the affected schools. Provisions shall be made to allow the school and or designated representative(s) to notify the project applicant when such measures are warranted.

LAUSD established maximum allowable noise levels to protect students and staff from noise impacts generated in terms of L_{eq}. These standards were established based on regulations set forth by the California Department of Transportation and the City of Los Angeles. LAUSD's exterior noise standard is 67 dBA L_{eq} and the interior noise standard is 52 dBA L_{eq}. A noise level increase of 3 dBA or more over ambient noise levels is considered significant for existing schools and would require mitigation to achieve levels within 2 dBA of pre-project ambient level

School Traffic and Pedestrian Routes

The following are environmental impact concerns and mitigation measures necessary to address school traffic, pedestrian routes and transportation safety issues.

- LAUSD Transportation Branch, (323) 227-4400, must be contacted regarding the potential impact, if any, upon existing school bus routes.

  School buses must have access to Stonehurst Elementary, Roscoe Elementary, and Sun Valley Middle Schools

  During construction phase, truck traffic and construction vehicles may cause traffic delays for our transported students.

  During and after construction, changed traffic patterns, lane adjustment, traffic light patterns and altered bus stops may impact school bus-on-time performance and bus passenger safety.

  Because of provisions in the California Vehicle Code, other trucks and construction vehicles may encounter school buses using the red flashing lights and must stop

  The Project Manager or designee should notify the LAUSD Transportation Branch of the expected start and ending dates for various portions of the project that may affect traffic through the areas.

- Contractors must guarantee that safe and convenient pedestrian routes to Stonehurst Elementary, Roscoe Elementary, and Sun Valley Middle Schools are maintained. The "Pedestrian Routes to Stonehurst Elementary, Roscoe Elementary, and Sun Valley Middle Schools" map will be provided upon request.
- Contractors must maintain ongoing communication with the administrator of Stonehurst Elementary, Roscoe Elementary, and Sun Valley Middle Schools providing sufficient notice to forewarn children and parents when existing pedestrian and vehicular routes to school will be impacted.
- Appropriate traffic controls (signs and signals) must be installed as needed to ensure pedestrian and vehicular safety.
- Haul routes are not to be routed past Stonehurst Elementary, Roscoe Elementary, and Sun Valley Middle Schools except when school is not in session.

- No staging or parking of construction vehicles, including vehicles to transport workers on streets adjacent to Stonehurst Elementary, and Roscoe Elementary and Sun Valley Middle Schools.
- Funding for crossing guards to provided when safety of children is compromised by construction-related activities at impacted crossings.
- Barriers must be constructed as needed to minimize trespassing, vandalism, and short-cut attractions and attractive nuisances.

- Security patrols should be funded and provided to minimize trespassing, vandalism, and short-cut attractions.
- Fencing should be installed to secure construction equipment to minimize trespassing, vandalism, and short-cut attractions.

The District's charge is to protect the health and safety of students and staff, and the integrity of the learning environment. The District also requires issues affecting school be resolved prior to project approval, followed by enforceable mitigation measures, established to offset negative school impacts.

Sincerely,

Raymond E. Dippel

Raymond E. Dippel
Assistant Environmental Planning Specialist

RD:rd

c: Ms. Zappa Wheeler
Ms. Kurzeka
Mr. Rangell
Ms. Burton

WMD

STATE OF CALIFORNIA -- THE RESOURCES AGENCY

GRAY DAVIS, *Governor*

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

DEC 3 2002

Mr. Vik Bapna
Watershed Management Division
Los Angeles County Department of Public Works
Post Office Box 1460
Alhambra, California 91802-1460

Notice of Preparation of a Draft Environmental Impact Report
Report for Sun Valley Watershed Management Plan, Los Angeles County

Dear Mr. Bapna:

The Division of Safety of Dams has reviewed the Notice of Preparation of a Draft Environmental Impact Report for the Sun Valley Watershed Management Plan, dated November 6, 2002.

Based on the information provided, we could not determine if the proposed retention dams and basins are under State jurisdiction for safety. Sections 6002 and 6003 of the California Water Code define dams as structures that are 25 feet or higher from the lowest point at the downstream toe with a reservoir storage capacity of more than 15 acre-feet or higher than 6 feet with a storage capacity of 50 acre-feet or more.

If the proposed project is jurisdictional, a construction application together with plans and specifications, must be filed with the Division of Safety of Dams. All dam safety related issues must be resolved prior to approval of the application, and the work must be performed under the supervision of a civil engineer registered in California. David Gutierrez, Design Engineering Branch Chief, at (916) 445-3092, is responsible for the construction application approval process.

If you have any questions, please contact Office Engineer Chuck Wong at (916) 323-1113 or Regional Engineer Mutaz Mihyar at (916) 322-6206.

Sincerely,

for

Stephen W. Verigin, Chief
Division of Safety of Dams

cc: Nadell Gayou, Resources Agency Project Coordinator
Environmental Review Section
901 P Street
Sacramento, California 95814

RUTH GALANTER
COUNCILMEMBER, SIXTH DISTRICT

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of the
City of Los Angeles
City Hall

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VAN NUYS DISTRICT OFFICE
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SUN VALLEY DISTRICT OFFICE
8135 SAN FERNANDO ROAD
SUN VALLEY, CA 91352
(818) 756-7558
FAX (818) 756-9512

December 10, 2002

Mr. Vik Bapna
Los Angeles County Department
of Public Works
900 S. Fremont Avenue
Alhambra, CA 91802

RE: NOP I20020599

Dear Mr. Bapna:

On the basis of preliminary information available to me, I wish to support the proposed watershed management plan and its component parts. I congratulate the County of Los Angeles and the other entities involved for seeking a more creative and cost effective way to manage water than has been done in the past.

As you know, Los Angeles receives nearly all its rainfall in a very short season, creating serious flooding problems and resulting in inadequate harvesting of the rainwater for future use. The Sun Valley Watershed Management Plan offers the first real hope of an integrated water management system, which should benefit our communities from the perspective of supply and of disposal.

I look forward to the development of this project.

Sincerely yours,

Ruth Galanter

RUTH GALANTER
Councilmember, Sixth District
City of Los Angeles

WM

State of California - The Resources Agency GRAY DAVIS, *Governor*

DEPARTMENT OF FISH AND GAME

http://www.dfg.ca.gov
4949 Viewridge Avenue
San Diego, CA 92123
(858) 467-4201

Flex your Power

December 13, 2002

Mr. Vic Bapna
Los Angeles County Department of Public Works
P/O Box 1460
Alhambra, CA 91802

Dear Mr. Bane:

Notice of Preparation of a Draft Environmental Impact Report for Sun Valley Watershed Management Plan SCH # 2002111051, Los Angeles County

The Department of Fish and Game (Department) appreciates this opportunity to comment on the above-referenced project, relative to impacts to biological resources. The proposed project is a watershed management plan for the Sun Valley area which will provide the blueprints for future flood control projects while incorporating increased recreation, water conservation and wildlife habitat opportunities.

To enable Department staff to adequately review and comment on the proposed project we recommend the following information, where applicable, be included in the Draft Environmental Impact Report:

1. A complete, **recent** assessment of flora and fauna within and adjacent to the project area, with particular emphasis upon identifying endangered, threatened, and locally unique species and sensitive habitats.

    a. A thorough **recent** assessment of rare plants and rare natural communities, following the Department's Guidelines for Assessing Impacts to Rare Plants and Rare Natural Communities (Attachment 1).

    b. A complete, **recent** assessment of sensitive fish, wildlife, reptile, and amphibian species. Seasonal variations in use of the project area should also be addressed. Recent, focused, species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with the Department and U.S. Fish and Wildlife Service.

c. **Rare, threatened, and endangered species to be addressed should include all those which meet the California Environmental Quality Act (CEQA) definition (see CEQA Guidelines, § 15380).**

d. The Department's California Natural Diversity Data Base in Sacramento should be contacted at (916) 327-5960 to obtain current information on any previously reported sensitive species and habitats, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code. Also, any Significant Ecological Areas (SEAs) or Environmentally Sensitive Habitats (ESHs) or any areas that are considered sensitive by the local jurisdiction that are located in or adjacent to the project area must be addressed.

2. A thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts. This discussion should focus on maximizing avoidance, and minimizing impacts.

a. CEQA Guidelines, § 15125(a), direct that knowledge of the regional setting is critical to an assessment of environmental impacts and that special emphasis should be placed on resources that are rare or unique to the region.

b. Project impacts should also be analyzed relative to their effects on off-site habitats and populations. Specifically, this should include nearby public lands, open space, adjacent natural habitats, and riparian ecosystems. Impacts to and maintenance of wildlife corridor/movement areas, including access to undisturbed habitat in adjacent areas, should be fully evaluated and provided. The analysis should also include a discussion of the potential for impacts resulting from such effects as increased vehicle traffic and outdoor artificial lighting.

c. A cumulative effects analysis should be developed as described under CEQA Guidelines, § 15130. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

d. Impacts to migratory wildlife affected by the project should be fully evaluated. This can include such elements as migratory butterfly roost sites and neo-tropical bird and waterfowl stop-over and staging sites. All migratory nongame native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (50 C.F.R. Section 10.13). Sections

3503, 3503.5 and 3513 of the California Fish and Game Code prohibit take of birds and their active nests, including raptors and other migratory nongame birds as listed under the MBTA.

e. Impacts to all habitats from City or County required Fuel Modification Zones.(FMZ). Areas slated as mitigation for loss of habitat shall not occur within the FMZ.

f. Proposed project activities (including disturbances to vegetation) should take place outside of the breeding bird season (February 1-September 15) to avoid take (including disturbances which would cause abandonment of active nests containing eggs and/or young). If project activities cannot avoid the breeding bird season, nest surveys should be conducted and active nests should be avoided and provided with a minimum buffer as determined by a biological monitor (the Department recommends a minimum 500 foot buffer for all active raptor nests).

3. A range of alternatives should be analyzed to ensure that alternatives to the proposed project are fully considered and evaluated. A range of alternatives which avoid or otherwise minimize impacts to sensitive biological resources including wetlands/riparian habitats, alluvial scrub, coastal sage scrub, native woodlands, etc. should be included. Specific alternative locations should also be evaluated in areas with lower resource sensitivity where appropriate.

   a. Mitigation measures for project impacts to sensitive plants, animals, and habitats should emphasize evaluation and selection of alternatives which avoid or otherwise minimize project impacts. Compensation for unavoidable impacts through acquisition and protection of high quality habitat elsewhere should be addressed.

   b. The Department considers Rare Natural Communities as threatened habitats having both regional and local significance. Thus, these communities should be fully avoided and otherwise protected from project-related impacts (Attachment 2).

   c. The Department generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare, threatened, or endangered species. Department studies have shown that these efforts are experimental in nature and largely unsuccessful.

4. A California Endangered Species Act (CESA) Permit must be obtained, if the project has the potential to result in "take" of species of plants or animals listed under CESA, ether

during construction or over the life of the project. CESA Permits are issued to conserve, protect, enhance, and restore State-listed threatened or endangered species and their habitats. Early consultation is encouraged, as significant modification to the proposed project and mitigation measures may be required in order to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, require that the Department issue a separate CEQA document for the issuance of a CESA permit unless the project CEQA document addresses all project impacts to listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of a CESA permit. For these reasons, the following information is requested:

a. Biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA Permit.

b. A Department-approved Mitigation Agreement and Mitigation Plan are required for plants listed as rare under the Native Plant Protection Act.

5. The Department opposes the elimination of watercourses and/or their channelization or conversion to subsurface drains. All wetlands and watercourses, whether intermittent, ephemeral, or perennial, must be retained and provided with substantial setbacks which preserve the riparian and aquatic habitat values and maintain their value to on-site and off-site wildlife populations.

a. The Department requires a streambed agreement, pursuant to Section 1600 et seq. of the Fish and Game Code, with the applicant prior to any direct or indirect impact to a lake or stream bed, bank or channel or associated riparian resources. The Department's issuance of a stream bed alteration agreement may be a project that is subject to CEQA. To facilitate our issuance of the agreement when CEQA applies, the Department as a responsible agency under CEQA may consider the local jurisdiction's (lead agency) document for the project. To minimize additional requirements by the Department under CEQA the document should fully identify the potential impacts to the lake, stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the agreement. Early consultation is recommended, since modification of the proposed project may be required to avoid or reduce impacts to fish and wildlife resources.

The Department suggests a pre-project or early consultation planning meeting for all projects. To make an appointment, please call Scott Harris, Wildlife Biologist, at (818) 360-8140. Thank you for this opportunity to provide comment.

Sincerely,

Scott Harris for

Morgan Wehtje
Environmental Scientist IV

Attachments

cc: Mr. Scott Harris
Ms. Betty Courtney
Department of Fish & Game
Mr. Scott Morgan
State Clearinghouse

ATTACHMENT 1

State of California
THE RESOURCES AGENCY
Department of Fish and Game
May 4, 1984

GUIDELINES FOR ASSESSING THE EFFECTS OF PROPOSED DEVELOPMENTS ON RARE AND ENDANGERED PLANTS AND PLANT COMMUNITIES

The following recommendations are intended to help those who prepare and review environmental documents determine <u>when</u> a botanical survey is needed, <u>who</u> should be considered qualified to conduct such surveys, <u>how</u> field surveys should be conducted and <u>what</u> information should be contained in the survey report.

1. Botanical surveys that are conducted to determine the environmental effects of a proposed development should be directed to all rare and endangered plants and plant communities. Rare and endangered plants are not necessarily limited to those species which have been "listed" by state and federal agencies but should include any species that, based on all available data, can be shown to be rare and/or endangered under the following definitions.

   A species, subspecies or variety of plant is "endangered" when the prospects of its survival and reproduction are in immediate jeopardy form one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition or disease. A plant is "rare" when, although not presently threatened with extinction, the species, subspecies or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens.

   Rare plant communities are those communities that are of highly limited distribution. These communities may or may not contain rare or endangered species. The most current version of the California Natural Diversity Data Base's Outline of Terrestrial Communities in California may be used as a guide to the names of communities.

2. It is appropriate to conduct a botanical field survey to determine if, or the extent that, rare plants will be affected by a proposed project when:

   a. Based on an initial biological assessment, it appears that the project may damage potential rare plant habitat;

   b. Rare plants have historically been identified on the project site, but adequate information of impact assessment is lacking; or

   c. No initial biological assessment has been conducted and it is unknown whether or not rare plants or their habitat exist on the site.

3. Botanical consultants should be selected on the basis of possession of the following qualifications (in order of importance):

   a. Experience as a botanical field investigator with experience in field sampling design and field methods;

   b. Taxonomic experience and a knowledge of plant ecology;

   c. Familiarity with the plants of the area, including rare species; and

   d. Familiarity with the appropriate state and federal statutes related to rare plants and plant collecting.

4. Field surveys should be conducted in a manner that will locate any rare or endangered species that may be present. Specifically, rare or endangered plant surveys should be:

   a. Conducted at the proper time of year when rare or endangered species are both "evident" and identifiable. Field surveys should be scheduled (1) to coincide with known flowering periods, and/or (2) during periods of phenological development that are necessary to identify the plant species of concern.

b. Floristic in nature. "Predictive surveys" (which predict the occurrence of rare species based on the occurrence of habitat or other physical features rather than actual field inspection) should be reserved for ecological studies, not for impact assessment. Every species noted in the field should be identified to the extent necessary to determine whether it is rare or endangered.

c. Conducted in a manner that is consistent with conservation ethics. Collection of rare or suspected rare species (voucher specimens) should be made only when such actions would not jeopardize the continued existence of the population and in accordance with applicable state and federal permit regulations. Voucher specimens should be deposited at recognized public herbaria for future reference. Photography should be used to document plant identification and habitat whenever possible, but especially when the population cannot withstand collection of voucher specimens.

d. Conducted using systematic field techniques in all habitats of the site to ensure a reasonably thorough coverage of potential impact areas.

e. Well documented. When a rare or endangered plant (or rare plant community) is located, a California Native Species (or Community) Field Survey Form or equivalent written form should be completed and submitted to the Natural Diversity Data Base.

5. Reports of botanical field surveys should be included in or with environmental assessments, negative declarations, EIR's and EIS's, should contain the following information:

a. Project description, including a detailed map of the project location and study area.

b. A written description of biological setting referencing the community nomenclature used and a vegetation map.

c. Detailed description of survey methodology.

d. Dates of field surveys.

e. Results of survey (including detailed maps).

f. An assessment of potential impacts.

g. Discussion of the importance of rare plant populations with consideration of nearby populations and total species distribution.

h. Recommended mitigation measures to reduce or avoid impacts.

i. List of all species identified.

j. Copies of all California Native Species Field Survey Forms or Natural Community Field Survey Forms.

k. Name of field investigator(s).

l. References cited, persons contacted, herbaria visited, and disposition of voucher specimens.

Sensitivity Rankings (Cont.)

Community Name

S1.2 Southern Foredunes
Mono Pumice Flat
Southern Interior Basalt Fl. Vernal Pool

S2.1 Venturan Coastal Sage Scrub
Diegan Coastal Sage Scrub
Riversidean Upland Coastal Sage Scrub
Riversidean Desert Sage Scrub
Sagebrush Steppe
Desert Sink Scrub
Mafic Southern Mixed Chaparrel
San Diego Mesa Hardpan Vernal P.
San Diego Mesa Claypan Vernal P.
Alkali Meadow
Southern Coastal Salt Marsh
Coastal Brackish Marsh
Transmontane Alkali Marsh
Coastal and Valley Freshwater Marsh
S. Arroya Willow Riparian Forest
Southern Willow Scrub
Modoc-G.Bas. Cottonwood Willow Rip.
Modoc-Great Basin Riparian Scrub
Mojave Desert Wash Scrub
Engelmann Oak Woodland
Open Engelmann Oak Woodland
Closed Engelmann Oak Woodland
Island Oak Woodland
California Walnut Woodland
Island Ironwood Forest
Island Cherry Forest
S. Interior Cypress Forest
Bigcone Spruce-Canyon Oak Forest

S2.2 Active Coastal Dunes
Active Desert Dunes
Stab. and Part. Stab. Desert Dunes
Stab. and Part. Stab. Desert Sandfield
Mojave Mixed Steppe
Transmontane Freshwater Marsh
Coulter Pine Forest
S. California Fellfield
White Mountains Fellfield

S2.3 Bristlecone Pine Forest
Limber Pine Forest

ATTACHMENT 2

Sensitivity of Top Priority Rare Natural Communities in Southern California*

*Sensitivity rankings are determined by the Department of Fish and Game, alifornia Natural Diversity Data Base and based on either number of known ccurrences (locations) and/or amount of habitat remaining (acreage). The hree rankings used for these top priority rare natural communities are as ollows:

1.- Less than 6 known locations and/or on less than 2,000 acres of habitat remaining

2.- Occurs in 6-20 known locations and/or 2,000-10,000 acres of habitat remaining

3.- Occurs in 21-100 known locations and/or 10,000-50,000 acres of habitat remaining

The number to the right of the decimal point after the ranking refers to he degree of threat posed to that natural community regardless of the ranking. or example:

S1.1 = very threatened
S2.2 = threatened
S3.3 = no current threats known

Sensitivity Rankings (February 1992)

ank	Community Name	
1.1	Mojave Riparian Forest	Southern Dune Scrub
	Sonoran Cottonwood Willow Riparian	Southern Coastal Bluff Scrub
	Mesquite Bosque	Maritime Succulent Scrub
	Elephant Tree Woodland	Riversidean Alluvial Fan Sage Scrub
	Crucifixion Thorn Woodland	Southern Maritime Chaparral
	Allthorn Woodland	Valley Needlegrass Grassland
	Arizonan Woodland	Great Basin Grassland
	Southern California Walnut Forest	Mojave Desert Grassland
	Mainland Cherry Forest	Pebble Plains
	Southern Bishop Pine Forest	Southern Sedge Bog
	Torrey Pine Forest	Cismontane Alkali Marsh
	Desert Mountain White Fir Forest	

WMD

December 11, 2002

Mr. Vik Bapna
Los Angeles County Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

Subject: CEQA Initial Environmental Study
Sun Valley Watershed Management Plan

Dear Mr. Bapna,

While the Burbank Glendale Pasadena Airport Authority ("Authority") concurs with the stated objectives of the subject study, it objects to some of its findings as it relates to the Authority's facilities within the project area, and is concerned that the proposed project could potentially have significant adverse safety effects on aviation.

Table 1 on page 1-4 incorrectly identifies property owned by the Authority and located at the Burbank-Glendale-Pasadena Airport ("Airport") west of Vineland Ave. as vacant property with a General Plan Designation of light manufacturing land use. In fact, the subject property is an integral part of the airport and contains important elements of the Federal Aviation Administration ("FAA") owned Instrument Landing System (ILS) for the Aircraft landing on Runway 26, as well as FAA-owned navigation aids and communication equipment. The area has been graded in accordance with FAA mandated requirements, and has numerous buried FAA cables, antennas and power conduits. Relocation and/ or modification of the elements, which include the localizer and the approach lighting, will require FAA approval and cooperation. Changes in grade, configuration or use of this property could have significant adverse safety implications for air traffic using Burbank Airport.

Table 2 on page 1-9 considers the Airport Property as a possible site for Stormwater Retention and/or Infiltration facilities. The parcel is contained within the Runway 8-26 Extended Safety Area. FAA policy discourages the development of facilities in the vicinity of airports that might attract birds, specifically bodies of water. Further, this area also constitutes the Airport's Runway Protection Zone for aircraft approaches and departures to and from Runway 8. Construction of water retention ponds or other similar grading efforts could reduce the effectiveness of the Runway Protection Zone to mitigate the effects of aircraft overshoot or undershoot of the runway.

Therefore it is the Airport Authority's opinion that the site should not be considered for the development of any uses whatsoever that are unrelated to the current uses in place by the FAA or the Airport.

Please feel free to contact me if you need any further information or clarification.

Sincerely,

Leo Klabbers

Leo Klabbers
Director Engineering and Planning

2627 Hollywood Way • Burbank, California 91505 • (818) 840-8840 • Fax: (818) 848-1173

MC# 01-00540

WS076

California Regional Water Quality Control Board

Los Angeles Region

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December 24, 2002

Mr. Vik Bapna
Watershed Management Division
County of Los Angeles Department of Public Works
PO Box 1460
Alhambra, California 91802-1460

via FAX

Dear Mr. Bapna:

Re: Sun Valley Watershed Management Plan: CEQA Initial Study, dated November 2002

We commend the County of Los Angeles and other active stakeholders on their progress to find innovative solutions to flooding problems in the Sun Valley watershed. As part of this process, the County of Los Angeles, as lead agency, has prepared an Initial Study for the proposed Sun Valley Watershed Management Plan (project), in compliance with CEQA (California Environmental Quality Act) regulations.

In our role as a responsible agency under CEQA, staff at the Regional Water Quality Control Board for the Los Angeles Region (Board) have reviewed your Initial Study, and we concur with your finding that the project may have a significant impact on the environment and that an environmental impact report (EIR) is required. In addition, we have several comments as well as recommendations regarding the scope of the EIR. These comments, summarized below, are similar to comments that we have made at some of the monthly meetings of Sun Valley stakeholders.

<u>Quality of Storm Water Runoff</u>

Sun Valley supports one of the greatest concentrations of industrial activities in the Los Angeles Region. We know of over 100 autodismantlers who operate in Sun Valley. And we know of another 100 heavy industrial operators, such as waste management and mining firms, in this area. Storm water runoff from facilities operating in these heavy industrial sectors is widely known to be contaminated.

Need for Water Quality Treatment: We recommend that the project design include (and that the EIR evaluate) an active, engineered water quality treatment system. We are concerned that passive treatment systems, such as settling basins, will not provide adequate treatment. Our concern and recommendation for engineered treatment is based upon storm water sampling data from over 100 permittees in the area, summaries of which we have shared with stakeholders. These data show that runoff fails to meet storm water benchmarks established by the US Environmental Protection Agency, let along more stringent water quality standards. And as you are aware, such polluted water will be much more difficult to treat once it infiltrates to underlying aquifers.

Need for More Rigorous Source Control: We recommend that the project include (and that the EIR evaluate) more rigorous source control. The Board is making a concerted effort to inspect Sun Valley facilities to ensure compliance with prohibitions on non-storm water discharges and to review the adequacy of "best management practices" (BMPs) that industrial operators implement to prevent and minimize contamination of storm water. However, the Board needs support from local agencies, to ensure that local agencies are enforcing their storm water quality ordinances, to ensure that all heavy industrial facilities are enrolled in the State's General Permit[1] and have a SWPPP (Storm Water Pollution Prevention Plan), and to respond to complaints and referrals. To date, we are pleased with the effort made by the City of Los Angeles in this regard, and hope that this effort is sustained.

Need for Coordinated Monitoring: We recommend that the project include (and that the EIR evaluate) a coordinated monitoring program that will assess the effectiveness of source control, the treatment system, and impacts to the quality of underlying ground water.

<u>Reliance on Gravel Pits for Infiltration</u>

We understand that mining has occurred below the water table in some of the gravel pits, thus exposing ground water to direct contamination. As the project will likely result in a higher water table, and since we rely so heavily on unsaturated flow to reduce storm water pollutants during infiltration to ground water, please ensure that EIR carefully evaluates this added risk. Also, what is the current reclamation plan for the gravel pits, and are there other reclamation alternatives?

<u>Landfills</u>

Again, as the project will likely result in a higher water table, we recommend that the EIR evaluate the risk of contamination to ground water from landfills. In particular, this

[1] General Permit for Discharges of Storm Water Associated with Industrial Activities (Order No. 97-03-DWQ)

evaluation should include an analysis of impacts resulting from ground water that may rise and come into contact with wastes in unlined landfills.

Artificial Recharge of Aquifers

Although we understand that the East Valley recycling project has been halted, other increases in artificial recharge operations at the Hanson spreading grounds also could raise the water table. We recommend that the EIR evaluate impacts from any increases in artificial recharge operations that could raise water table levels.

Thank you for the opportunity to review the Initial Study and provide these comments. We would like to acknowledge the significant efforts of the local agencies, community groups, and other stakeholders who have formed a partnership to come up with this innovative solution. Although we do have to caution that this project has challenging water quality issues to address, we are especially pleased to acknowledge the potential for this project to augment water supplies, consistent with our Board's approval of the County's SUSMP (Standard Urban Storm Water Mitigation Plans).

Finally, I apologize that we did not provide these written comments earlier; however, Mr. Ivar Ridgeway and I have made these comments already at several stakeholder meetings. While you need to be aware that the Board hasn't any designated funding to support our CEQA review and our stakeholder involvement, please be assured that we shall endeavor find ways to continue to work with stakeholders on this important project, and to meet the challenge of conserving water and protecting water quality. Please do not hesitate to me at (213) 576-6618 should you have questions or wish to discuss our comments.

Sincerely,

Wendy Phillips
Chief, Storm Water Section

cc: State Clearinghouse
Shahram Kharaghani, Storm Water Division, City of Los Angeles
Mark G. Mackowski, ULARA Watermaster

SOUTHERN CALIFORNIA REGIONAL RAIL AUTHOR

METROLINK.

December 23, 2002

Mr. Vik Bapna
Los Angeles County Department of Public Works
Watershed Management Division
P. O. Box 1460
Alhambra, CA 91802-1460

Subject: Sun Valley Watershed Management Plan CEQA Initial Environmental Study

Dear Mr. Bapna:

We are in receipt of the Sun Valley Watershed Notice of Preparation of a Draft Environmental Impact Report dated November 6, 2002 and offer the following response.

The Southern California Regional Rail Authority (SCRRA) is a five-county joint powers authority, created pursuant to the State of California Public Utilities Code Section 130255 and California Government Code Section 6500 et seq., to build and operate the "Metrolink" commuter rail system. The five-county member agencies are comprised of the following: Los Angeles County Metropolitan Transportation Authority, Ventura County Transportation Commission, Orange County Transportation Authority, San Bernardino Associated Governments, and Riverside County Transportation Commission. SCRRA constructs, maintains, and operates commuter train service in the five-county area on rail rights-of-ways owned by the member agencies.

According to Figure 1 of the CEQA Initial Environmental Study, two SCRRA rail lines run through the proposed area. The SCRRA Valley Subdivision runs just north of and adjacent to San Fernando Road and the Ventura Subdivision runs south of the Burbank Airport. In addition to SCRRA Passenger Trains, the Union Pacific Railroad (UPRR) runs freight trains on both the Valley Subdivision and the Ventura Subdivision. AMTRAK also runs Passenger Trains on the Ventura Subdivision. The Los Angeles County Metropolitan Transportation Authority (MTA) is the property owner of the Valley Subdivision and the MTA shares ownership with UPRR on the Ventura Subdivision. SCRRA Public Projects Division is the point of contact with MTA, the State of California Public Utilities Commission (PUC), and the Federal Railroad Administration (FRA) and provides permit review and recommendation for projects in and adjacent to the railroad property. UPRR must also concur with projects affecting their property on the Ventura Subdivision. SCRRA provides for safety of third party contractors on both the Valley and Ventura Subdivisions.

Although the CEQA Initial Environmental Study gives no details on any proposed construction, all plan drawings and other documents must be submitted to the SCRRA Right of Way Engineer for review. The SCRRA Right of Way Engineer will arrange for all appropriate licenses, easements, and other rights needed for new facilities or modifications to existing facilities both within and adjacent to railroad rights of way. The Sun Valley Watershed project has the potential for significant impacts to SCRRA operations and future construction. Of particular importance is proposed construction that changes drainage on railroad property. Particular concerns can be addressed as the EIR process continues. Therefore SCRRA should be involved at every level of the EIR process.

Please reference the above-noted file number on future correspondence pertaining to this project. If you have any questions, I can be reached at (213) 452-0256 by phone, (213) 452-0423 by fax, and hanleyt@scrra.net by e-mail.

Sincerely,

Thomas G. Hanley, P.E.
Right of Way Engineer

TGH

R:\Correspondence\Sun Valley Watershed 121702.doc

Cc: Ron Mathieu, SCRRA without attachment
Greg Graves, SCRRA without attachment
Brad Jordan, SCRRA without attachment
Mike McGinley, SCRRA without attachment
Marshall Allen, SCRRA without attachment
Frank Mendoza, SCRRA without attachment

WMT
979

MWD

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Executive Office

December 10, 2002

Mr. Vik Bapna
Los Angeles County Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

Dear Mr. Bapna:

Initial Environmental Study and Notice of Preparation of a
<u>Draft Program Environmental Impact Report for the Sun Valley Watershed Management Plan</u>

The Metropolitan Water District of Southern California (Metropolitan) has received a copy of the Initial Environmental Study and Notice of Preparation of a Draft Program Environmental Impact Report (EIR) for the Sun Valley Watershed Management Plan in the city of Los Angeles. The Los Angeles County Department of Public Works (County) will be the lead agency for the EIR. The proposed project is a watershed management plan, which provides a blueprint for a multi-purpose flood control program to solve the local flooding problem in the Sun Valley watershed area, while increasing water conservation, recreational opportunities, and wildlife habitat, and reducing stormwater pollution. Proposed plan elements include construction and operation of stormwater retention and/or infiltration facilities, construction and operation of stormwater conveyance facilities, construction of a stormwater reuse distribution system, construction and operation of underground piping to divert flood flows from Tujunga Wash into the Sheldon Gravel Pit, and implementation of best management practices. The project area encompasses the communities of Sun Valley and North Hollywood, and is approximately bordered by Tujunga Wash to the west, Burbank-Glendale-Pasadena Airport to the east, Hansen Dam to the north, and Burbank Boulevard to the south. This letter contains Metropolitan's response to the Initial Environmental Study as a potentially affected agency.

Metropolitan supports development of watershed management plans that consider water resources management objectives for the watershed, including source water quality protection and/or improvement, water supply availability, water supply storage, flood and erosion control, and aquatic ecosystem protection objectives. However, Metropolitan does have concerns related to the proposed locations of stormwater retention and/or infiltration facilities and potential impacts to Metropolitan's facilities in the area. Stormwater retention facilities that are proposed include surface retention basins, underground infiltration facilities and cisterns, and other structures to hold stormwater from onsite and/or surrounding areas.

700 N. Alameda Street, Los Angeles, California 90012 • Mailing Address: Box 54153, Los Angeles, California 90054-0153 • Telephone (213) 217-6000

Mr. Vic Bapna
Page 2
December 10, 2002

Our review of the Initial Environmental Study indicates that Metropolitan owns and operates a facility within the Sun Valley watershed. Metropolitan's East Valley Feeder crosses through the Sun Valley watershed. The East Valley Feeder extends in a generally northwest-southeast direction through the watershed. The pipeline, which has an inside diameter of 48 inches through the project area, extends north along San Fernando Road, briefly extends west along Interstate 5, and then continued northward along Haddon Avenue. The pipeline is located within street rights-of-way within the proposed project site.

Based upon the location of proposed stormwater retention and/or infiltration facilities shown on Figure 1 of the Initial Environmental Study and the description provided in the text, it appears that Metropolitan's East Valley Feeder pipeline is adjacent to or in the vicinity of several components of the proposed project. Specifically, the East Valley Feeder is adjacent to or in the vicinity of the proposed sites of new stormwater retention and/or infiltration facilities at Roscoe Elementary School, Sun Valley Park, Strathern Pit, Tuxford Green, Vulcan Gravel Processing Pit, and Boulevard Pit.

Metropolitan is concerned with potential impacts to the East Valley Feeder pipeline associated with future construction or development associated with proposed stormwater retention and/or infiltration facilities. Metropolitan requests that the County consider the East Valley Feeder in its project planning and identify potential impacts to the facility that may occur as a result of project implementation. The County should also identify whether protection or relocation of this pipeline would be required.

In order to avoid potential conflicts with Metropolitan's rights-of-way, we require that any design plans for any activity in the area of Metropolitan's pipelines or facilities be submitted for our review and written approval.

Metropolitan must also be allowed to maintain its rights-of-way and access to the East Valley Feeder and any other Metropolitan facilities at all times in order to repair and maintain the current condition of those facilities.

The County may obtain detailed prints of drawings of Metropolitan's pipelines and rights-of-way by calling Metropolitan's Substructures Information Line at (213) 217-6564. To assist the County in preparing plans that are compatible with Metropolitan's facilities and easements, we have enclosed a copy of the "Guidelines for Developments in the Area of Facilities, Fee Properties, and/or Easements of The Metropolitan Water District of Southern California." Please note that all submitted designs or plans must clearly identify Metropolitan's facilities and rights-of-way.

In addition, the Sun Valley watershed includes many landfills. The Draft Program EIR should identify whether landfill contamination plumes are present in the watershed. If present, the Draft Program EIR should discuss and analyze the potential impacts to existing groundwater from landfill contamination plumes from groundwater recharge.

We appreciate the opportunity to provide input to your planning process and we look forward to receiving future environmental documentation on this project. If we can be of further assistance, please contact William Fong of the Environmental Planning Team at (213) 217-6899.

Very truly yours,

Laura J. Simonek

Laura J. Simonek
Manager, Asset Management
and Facilities Planning Unit

JAH/aj
(Public Folders/EPU/Letters/10-DEC-02A.doc – Vic Bapna)

Enclosures: Planning Guidelines

Guidelines for Developments in the
Area of Facilities, Fee Properties, and/or Easements
of The Metropolitan Water District of Southern California

1. Introduction

a. The following general guidelines should be followed for the design of proposed facilities and developments in the area of Metropolitan's facilities, fee properties, and/or easements.

b. We require that 3 copies of your tentative and final record maps, grading, paving, street improvement, landscape, storm drain, and utility plans be submitted for our review and written approval as they pertain to Metropolitan's facilities, fee properties and/or easements, prior to the commencement of any construction work.

2. Plans, Parcel and Tract Maps

The following are Metropolitan's requirements for the identification of its facilities, fee properties, and/or easements on your plans, parcel maps and tract maps:

a. Metropolitan's fee properties and/or easements and its pipelines and other facilities must be fully shown and identified as Metropolitan's on all applicable plans.

b. Metropolitan's fee properties and/or easements must be shown and identified as Metropolitan's with the official recording data on all applicable parcel and tract maps.

c. Metropolitan's fee properties and/or easements and existing survey monuments must be dimensionally tied to the parcel or tract boundaries.

d. Metropolitan's records of surveys must be referenced on the parcel and tract maps.

3. <u>Maintenance of Access Along Metropolitan's Rights-of-Way</u>

a. Proposed cut or fill slopes exceeding 10 percent are normally not allowed within Metropolitan's fee properties or easements. This is required to facilitate the use of construction and maintenance equipment, and provide access to its aboveground and belowground facilities.

b. We require that 16-foot-wide commercial-type driveway approaches be constructed on both sides of all streets crossing Metropolitan's rights-of-way. Openings are required in any median island. Access ramps, if necessary, must be at least 16-feet-wide. Grades of ramps are normally not allowed to exceed 10 percent. If the slope of an access ramp must exceed 10 percent due to the topography, the ramp must be paved. We require a 40-foot-long level area on the driveway approach to access ramps where the ramp meets the street. At Metropolitan's fee properties, we may require fences and gates.

c. The terms of Metropolitan's permanent easement deeds normally preclude the building or maintenance of structures of any nature or kind within its easements, to ensure safety and avoid interference with operation and maintenance of Metropolitan's pipelines or other facilities. Metropolitan must have vehicular access along the easements at all times for inspection, patrolling, and for maintenance of the pipelines and other facilities on a routine basis. We require a 20-foot-wide clear zone around all above-ground facilities for this routine access. This clear zone should slope away from our facility on a grade not to exceed 2 percent. We must also have access along the easements with construction equipment. An example of this is shown on Figure 1.

d. The footings of any proposed buildings adjacent to Metropolitan's fee properties and/or easements must not encroach into the fee property or easement or impose additional loading on Metropolitan's pipelines or other facilities therein. A typical situation is shown on Figure 2. Prints of the detail plans of the footings for any building or structure adjacent to the fee property or easement must be submitted for our review and written approval as they pertain to the pipeline or other facilities therein. Also, roof eaves of buildings adjacent to the easement or fee property must not overhang into the fee property or easement area.

e. Metropolitan's pipelines and other facilities, e.g. structures, manholes, equipment, survey monuments, etc. within its fee properties and/or easements must be protected from damage by the easement holder on Metropolitan's property or the property owner where Metropolitan has an easement, at no expense to Metropolitan. If the facility is a cathodic protection station it shall be located prior to any grading or excavation. The exact location, description and way of protection shall be shown on the related plans for the easement area.

4. Easements on Metropolitan's Property

a. We encourage the use of Metropolitan's fee rights-of-way by governmental agencies for public street and utility purposes, provided that such use does not interfere with Metropolitan's use of the property, the entire width of the property is accepted into the agency's public street system and fair market value is paid for such use of the right-of-way.

b. Please contact the Director of Metropolitan's Right of Way and Land Division, telephone (213) 250-6302, concerning easements for landscaping, street, storm drain, sewer, water or other public facilities proposed within Metropolitan's fee properties. A map and legal description of the requested easements must be submitted. Also, written evidence must be submitted that shows the city or county will accept the easement for the specific purposes into its public system. The grant of the easement will be subject to Metropolitan's rights to use its land for water pipelines and related purposes to the same extent as if such grant had not been made. There will be a charge for the easement. Please note that, if entry is required on the property prior to issuance of the easement, an entry permit must be obtained. There will also be a charge for the entry permit.

5. Landscaping

Metropolitan's landscape guidelines for its fee properties and/or easements are as follows:

a. A green belt may be allowed within Metropolitan's fee property or easement.

b. All landscape plans shall show the location and size of Metropolitan's fee property and/or easement and the location and size of Metropolitan's pipeline or other facilities therein.

c. Absolutely no trees will be allowed within 15 feet of the centerline of Metropolitan's existing or future pipelines and facilities.

d. Deep-rooted trees are prohibited within Metropolitan's fee properties and/or easements. Shallow-rooted trees are the only trees allowed. The shallow-rooted trees will not be permitted any closer than 15 feet from the centerline of the pipeline, and such trees shall not be taller than 25 feet with a root spread no greater than 20 feet in diameter at maturity. Shrubs, bushes, vines, and ground cover are permitted, but larger shrubs and bushes should not be planted directly over our pipeline. Turf is acceptable. We require submittal of landscape plans for Metropolitan's prior review and written approval. (See Figure 3).

e. The landscape plans must contain provisions for Metropolitan's vehicular access at all times along its rights-of-way to its pipelines or facilities therein. Gates capable of accepting Metropolitan's locks are required in any fences across its rights-of-way. Also, any walks or drainage facilities across its access route must be constructed to AASHTO H-20 loading standards.

f. Rights to landscape any of Metropolitan's fee properties must be acquired from its Right of Way and Land Division. Appropriate entry permits must be obtained prior to any entry on its property. There will be a charge for any entry permit or easements required.

6. <u>Fencing</u>

Metropolitan requires that perimeter fencing of its fee properties and facilities be constructed of universal chain link, 6 feet in height and topped with 3 strands of barbed wire angled upward and outward at a 45 degree angle or an approved equal for a total fence height of 7 feet. Suitable substitute fencing may be considered by Metropolitan. (Please see Figure 5 for details).

7. <u>Utilities in Metropolitan's Fee Properties and/or Easements or Adjacent to Its Pipeline in Public Streets</u>

Metropolitan's policy for the alinement of utilities permitted within its fee properties and/or easements and street rights-of-way is as follows:

a. Permanent structures, including catch basins, manholes, power poles, telephone riser boxes, etc., shall not be located within its fee properties and/or easements.

b. We request that permanent utility structures within public streets, in which Metropolitan's facilities are constructed under the Metropolitan Water District Act, be placed as far from our pipeline as possible, but not closer than 5 feet from the outside of our pipeline.

c. The installation of utilities over or under Metropolitan's pipeline(s) must be in accordance with the requirements shown on the enclosed prints of Drawings Nos. C-11632 and C-9547. Whenever possible we request a minimum of one foot clearance between Metropolitan's pipe and your facility. Temporary support of Metropolitan's pipe may also be required at undercrossings of its pipe in an open trench. The temporary support plans must be reviewed and approved by Metropolitan.

d. Lateral utility crossings of Metropolitan's pipelines must be as perpendicular to its pipeline alinement as practical. Prior to any excavation our pipeline shall be located manually and any excavation within two feet of our pipeline must be done by hand. This shall be noted on the appropriate drawings.

e. Utilities constructed longitudinally within Metropolitan's rights-of-way must be located outside the theoretical trench prism for uncovering its pipeline and must be located parallel to and as close to its rights-of-way lines as practical.

f. When piping is jacked or installed in jacked casing or tunnel under Metropolitan's pipe, there must be at least two feet of vertical clearance between the bottom of Metropolitan's pipe and the top of the jacked pipe, jacked casing or tunnel. We also require that detail drawings of the shoring for the jacking or tunneling pits be submitted for our review and approval. Provisions must be made to grout any voids around the exterior of the jacked pipe, jacked casing or tunnel. If the piping is installed in a jacked casing or tunnel the annular space between the piping and the jacked casing or tunnel must be filled with grout.

g. Overhead electrical and telephone line requirements:

1) Conductor clearances are to conform to the California State Public Utilities Commission, General Order 95, for Overhead Electrical Line Construction or at a greater clearance if required by Metropolitan. Under no circumstances shall clearance be less than 35 feet.

2) A marker must be attached to the power pole showing the ground clearance and line voltage, to help prevent damage to your facilities during maintenance or other work being done in the area.

3) Line clearance over Metropolitan's fee properties and/or easements shall be shown on the drawing to indicate the lowest point of the line under the most adverse conditions including consideration of sag, wind load, temperature change, and support type. We require that overhead lines be located at least 30 feet laterally away from all above-ground structures on the pipelines.

4) When underground electrical conduits, 120 volts or greater, are installed within Metropolitan's fee property and/or easement, the conduits must be incased in a minimum of three inches of red concrete. Where possible, above ground warning signs must also be placed at the right-of-way lines where the conduits enter and exit the right-of-way.

h. The construction of sewerlines in Metropolitan's fee properties and/or easements must conform to the California Department of Health Services Criteria for the Separation of Water Mains and Sanitary Services and the local City or County Health Code Ordinance as it relates to installation of sewers in the vicinity of pressure waterlines. The construction of sewerlines should also conform to these standards in street rights-of- way.

i. Cross sections shall be provided for all pipeline crossings showing Metropolitan's fee property and/or easement limits and the location of our pipeline(s). The exact locations of the crossing pipelines and their elevations shall be marked on as-built drawings for our information.

j. Potholing of Metropolitan's pipeline is required if the vertical clearance between a utility and Metropolitan's pipeline is indicated on the plan to be one foot or less. If the indicated clearance is between one and two feet, potholing is suggested. Metropolitan will provide a representative to assists others in locating and identifying its pipeline. Two-working days notice is requested.

k. Adequate shoring and bracing is required for the full depth of the trench when the excavation encroaches within the zone shown on Figure 4.

l. The location of utilities within Metropolitan's fee property and/or easement shall be plainly marked to help prevent damage during maintenance or other work done in the area. Detectable tape over buried utilities should be placed a minimum of 12 inches above the utility and shall conform to the following requirements:

1) Water pipeline: A two-inch blue warning tape shall be imprinted with:

"CAUTION BURIED WATER PIPELINE"

2) Gas, oil, or chemical pipeline: A two-inch yellow warning tape shall be imprinted with:

"CAUTION BURIED _______ PIPELINE"

3) Sewer or storm drain pipeline: A two-inch green warning tape shall be imprinted with:

"CAUTION BURIED ______ PIPELINE"

4) Electric, street lighting, or traffic signals conduit: A two-inch red warning tape shall be imprinted with:

"CAUTION BURIED _______ CONDUIT"

5) Telephone, or television conduit: A two-inch orange warning tape shall be imprinted with:

"CAUTION BURIED _______ CONDUIT"

m. Cathodic Protection requirements:

1) If there is a cathodic protection station for Metropolitan's pipeline in the area of the proposed work, it shall be located prior to any grading or excavation. The exact location, description and manner of protection shall be shown on all applicable plans. Please contact Metropolitan's Corrosion Engineering Section, located at Metropolitan's F. E. Weymouth Softening and Filtration Plant, 700 North Moreno Avenue, La Verne, California 91750, telephone (714) 593-7474, for the locations of Metropolitan's cathodic protection stations.

2) If an induced-current cathodic protection system is to be installed on any pipeline crossing Metropolitan's pipeline, please contact Mr. Wayne E. Risner at (714) 593-7474 or (213) 250-5085. He will review the proposed system and determine if any conflicts will arise with the existing cathodic protection systems installed by Metropolitan.

3) Within Metropolitan's rights-of-way, pipelines and carrier pipes (casings) shall be coated with an approved protective coating to conform to Metropolitan's requirements, and shall be maintained in a neat and orderly condition as directed by Metropolitan. The application and monitoring of cathodic protection on the pipeline and casing shall conform to Title 49 of the Code of Federal Regulations, Part 195.

4) If a steel carrier pipe (casing) is used:

(a) Cathodic protection shall be provided by use of a sacrificial magnesium anode (a sketch showing the cathodic protection details can be provided for the designers information).

(b) The steel carrier pipe shall be protected with a coal tar enamel coating inside and out in accordance with AWWA C203 specification.

n. All trenches shall be excavated to comply with the CAL/OSHA Construction Safety Orders, Article 6, beginning with Sections 1539 through 1547. Trench backfill shall be placed in 8-inch lifts and shall be compacted to 95 percent relative compaction (ASTM D698) across roadways and through protective dikes. Trench backfill elsewhere will be compacted to 90 percent relative compaction (ASTM D698).

o. Control cables connected with the operation of Metropolitan's system are buried within streets, its fee properties and/or easements. The locations and elevations of these cables shall be shown on the drawings. The drawings shall note that prior to any excavation in the area, the control cables shall be located and measures shall be taken by the contractor to protect the cables in place.

p. Metropolitan is a member of Underground Service Alert (USA). The contractor (excavator) shall contact USA at 1-800-422-4133 (Southern California) at least 48 hours prior to starting any excavation work. The contractor will be liable for any damage to Metropolitan's facilities as a result of the construction.

8. Paramount Right

Facilities constructed within Metropolitan's fee properties and/or easements shall be subject to the paramount right of Metropolitan to use its fee properties and/or easements for the purpose for which they were acquired. If at any time Metropolitan or its assigns should, in the exercise of their rights, find it necessary to remove any of the facilities from the fee properties and/or easements, such removal and replacement shall be at the expense of the owner of the facility.

9. Modification of Metropolitan's Facilities

When a manhole or other of Metropolitan's facilities must be modified to accommodate your construction or reconstruction, Metropolitan will modify the facilities with its forces. This should be noted on the construction plans. The estimated cost to perform this modification will be given to you and we will require a deposit for this amount before the work is performed. Once the deposit is received, we will schedule the work. Our forces will coordinate the work with your contractor. Our final billing will be based on actual cost incurred, and will include materials, construction, engineering plan review, inspection, and administrative overhead charges calculated in accordance with Metropolitan's standard accounting practices. If the cost is less than the deposit, a refund will be made; however, if the cost exceeds the deposit, an invoice will be forwarded for payment of the additional amount.

10. Drainage

a. Residential or commercial development typically increases and concentrates the peak storm water runoff as well as the total yearly storm runoff from an area, thereby increasing the requirements for storm drain facilities downstream of the development. Also, throughout the year water from landscape irrigation, car washing, and other outdoor domestic water uses flows into the storm drainage system resulting in weed abatement, insect infestation, obstructed access and other problems. Therefore, it is Metropolitan's usual practice not to approve plans that show discharge of drainage from developments onto its fee properties and/or easements.

b. If water must be carried across or discharged onto Metropolitan's fee properties and/or easements, Metropolitan will insist that plans for development provide that it be carried by closed conduit or lined open channel approved in writing by Metropolitan. Also the drainage facilities must be maintained by others, e.g., city, county, homeowners association, etc. If the development proposes changes to existing drainage features, then the developer shall make provisions to provide for replacement and these changes must be approved by Metropolitan in writing.

11. Construction Coordination

During construction, Metropolitan's field representative will make periodic inspections. We request that a stipulation be added to the plans or specifications for notification of Mr. __________ of Metropolitan's Operations Services Branch, telephone (213) 250-____, at least two working days prior to any work in the vicinity of our facilities.

12. Pipeline Loading Restrictions

a. Metropolitan's pipelines and conduits vary in structural strength, and some are not adequate for AASHTO H-20 loading. Therefore, specific loads over the specific sections of pipe or conduit must be reviewed and approved by Metropolitan. However, Metropolitan's pipelines are typically adequate for AASHTO H-20 loading provided that the cover over the pipeline is not less than four feet or the cover is not substantially increased. If the temporary cover over the pipeline during construction is between three and four feet, equipment must restricted to that which imposes loads no greater than AASHTO H-10. If the cover is between two and three feet, equipment must be restricted to that of a Caterpillar D-4 tract-type tractor. If the cover is less than two feet, only hand equipment may be used. Also, if the contractor plans to use any equipment over Metropolitan's pipeline which will impose loads greater than AASHTO H-20, it will be necessary to submit the specifications of such equipment for our review and approval at least one week prior to its use. More restrictive requirements may apply to the loading guideline over the San Diego Pipelines 1 and 2, portions of the Orange County Feeder, and the Colorado River Aqueduct. Please contact us for loading restrictions on all of Metropolitan's pipelines and conduits.

b. The existing cover over the pipeline shall be maintained unless Metropolitan determines that proposed changes do not pose a hazard to the integrity of the pipeline or an impediment to its maintenance.

13. Blasting

a. At least 20 days prior to the start of any drilling for rock excavation blasting, or any blasting, in the vicinity of Metropolitan's facilities, a two-part preliminary conceptual plan shall be submitted to Metropolitan as follows:

b. Part 1 of the conceptual plan shall include a complete summary of proposed transportation, handling, storage, and use of explosions.

c. Part 2 shall include the proposed general concept for blasting, including controlled blasting techniques and controls of noise, fly rock, airblast, and ground vibration.

14. CEQA Requirements

a. When Environmental Documents Have Not Been Prepared

1) Regulations implementing the California Environmental Quality Act (CEQA) require that Metropolitan have an opportunity to consult with the agency or consultants preparing any environmental documentation. We are required to review and consider the environmental effects of the project as shown in the Negative Declaration or Environmental Impact Report (EIR) prepared for your project before committing Metropolitan to approve your request.

2) In order to ensure compliance with the regulations implementing CEQA where Metropolitan is not the Lead Agency, the following minimum procedures to ensure compliance with the Act have been established:

a) Metropolitan shall be timely advised of any determination that a Categorical Exemption applies to the project. The Lead Agency is to advise Metropolitan that it and other agencies participating in the project have complied with the requirements of CEQA prior to Metropolitan's participation.

b) Metropolitan is to be consulted during the preparation of the Negative Declaration or EIR.

c) Metropolitan is to review and submit any necessary comments on the Negative Declaration or draft EIR.

d) Metropolitan is to be indemnified for any costs or liability arising out of any violation of any laws or regulations including but not limited to the California Environmental Quality Act and its implementing regulations.

b. <u>When Environmental Documents Have Been Prepared</u>

If environmental documents have been prepared for your project, please furnish us a copy for our review and files in a timely manner so that we may have sufficient time to review and comment. The following steps must also be accomplished:

1) The Lead Agency is to advise Metropolitan that it and other agencies participating in the project have complied with the requirements of CEQA prior to Metropolitan's participation.

2) You must agree to indemnify Metropolitan, its officers, engineers, and agents for any costs or liability arising out of any violation of any laws or regulations including but not limited to the California Environmental Quality Act and its implementing regulations.

15. <u>Metropolitan's Plan-Review Cost</u>

a. An engineering review of your proposed facilities and developments and the preparation of a letter response giving Metropolitan's comments, requirements and/or approval that will require 8 man-hours or less of effort is typically performed at no cost to the developer, unless a facility must be modified where Metropolitan has superior rights. If an engineering review and letter response requires more than 8 man-hours of effort by Metropolitan to determine if the proposed facility or development is compatible with its facilities, or if modifications to Metropolitan's manhole(s) or other facilities will be required, then all of Metropolitan's costs associated with the project must be paid by the developer, unless the developer has superior rights.

b. A deposit of funds will be required from the developer before Metropolitan can begin its detailed engineering plan review that will exceed 8 hours. The amount of the required deposit will be determined after a cursory review of the plans for the proposed development.

c. Metropolitan's final billing will be based on actual cost incurred, and will include engineering plan review, inspection, materials, construction, and administrative overhead charges calculated in accordance with Metropolitan's standard accounting practices. If the cost is less than the deposit, a refund will be made; however, if the cost exceeds the deposit, an invoice will be forwarded for payment of the additional amount. Additional deposits may be required if the cost of Metropolitan's review exceeds the amount of the initial deposit.

16. Caution

We advise you that Metropolitan's plan reviews and responses are based upon information available to Metropolitan which was prepared by or on behalf of Metropolitan for general record purposes only. Such information may not be sufficiently detailed or accurate for your purposes. No warranty of any kind, either express or implied, is attached to the information therein conveyed as to its accuracy, and no inference should be drawn from Metropolitan's failure to comment on any aspect of your project. You are therefore cautioned to make such surveys and other field investigations as you may deem prudent to assure yourself that any plans for your project are correct.

17. Additional Information

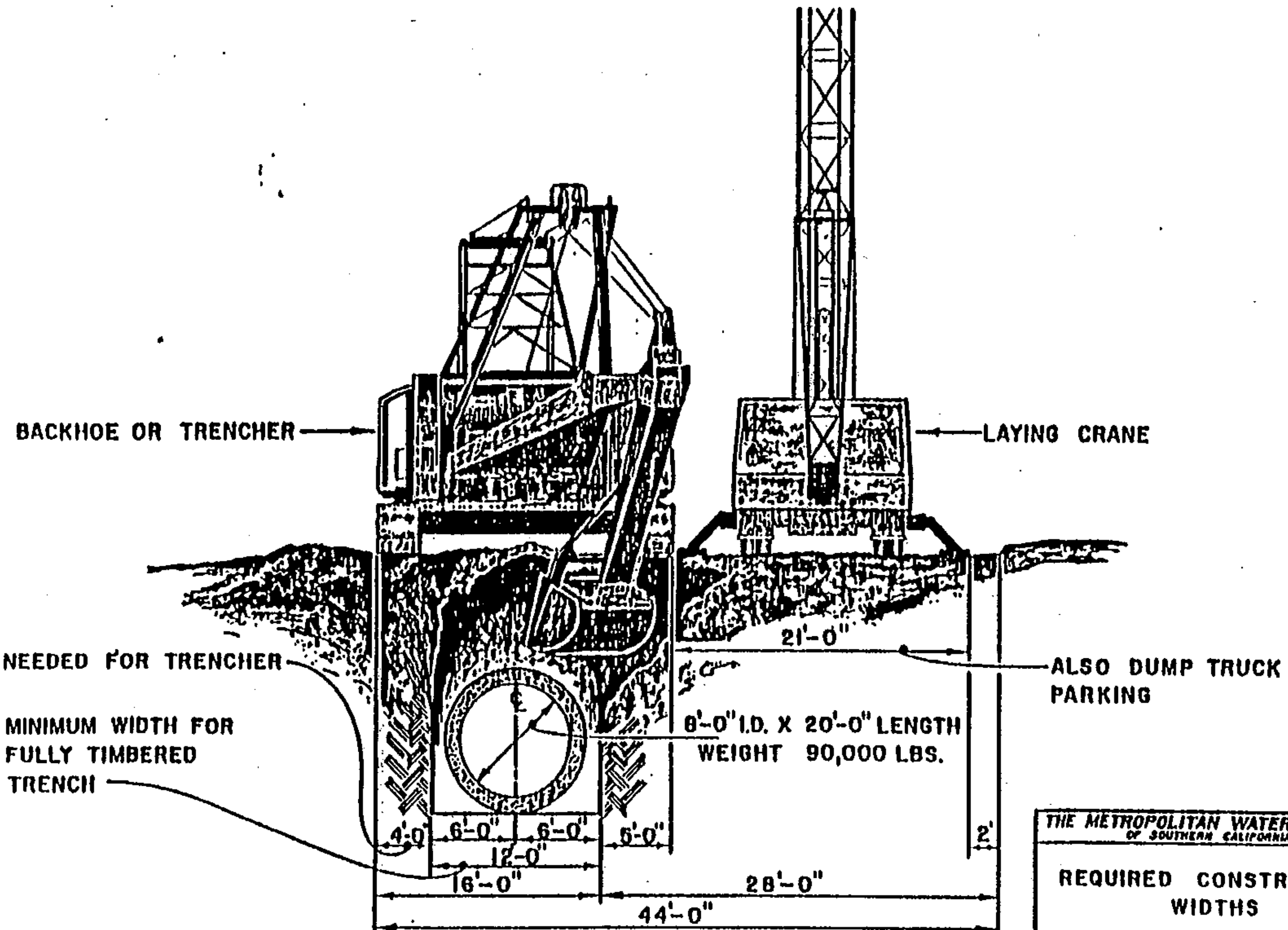
Should you require additional information, please contact:

Civil Engineering Substructures Section
Metropolitan Water District
of Southern California
P.O. Box 54153
Los Angeles, California 90054-0153
(213) 217-6000

JEH/MRW/lk

Rev. January 22, 1989

Encl.

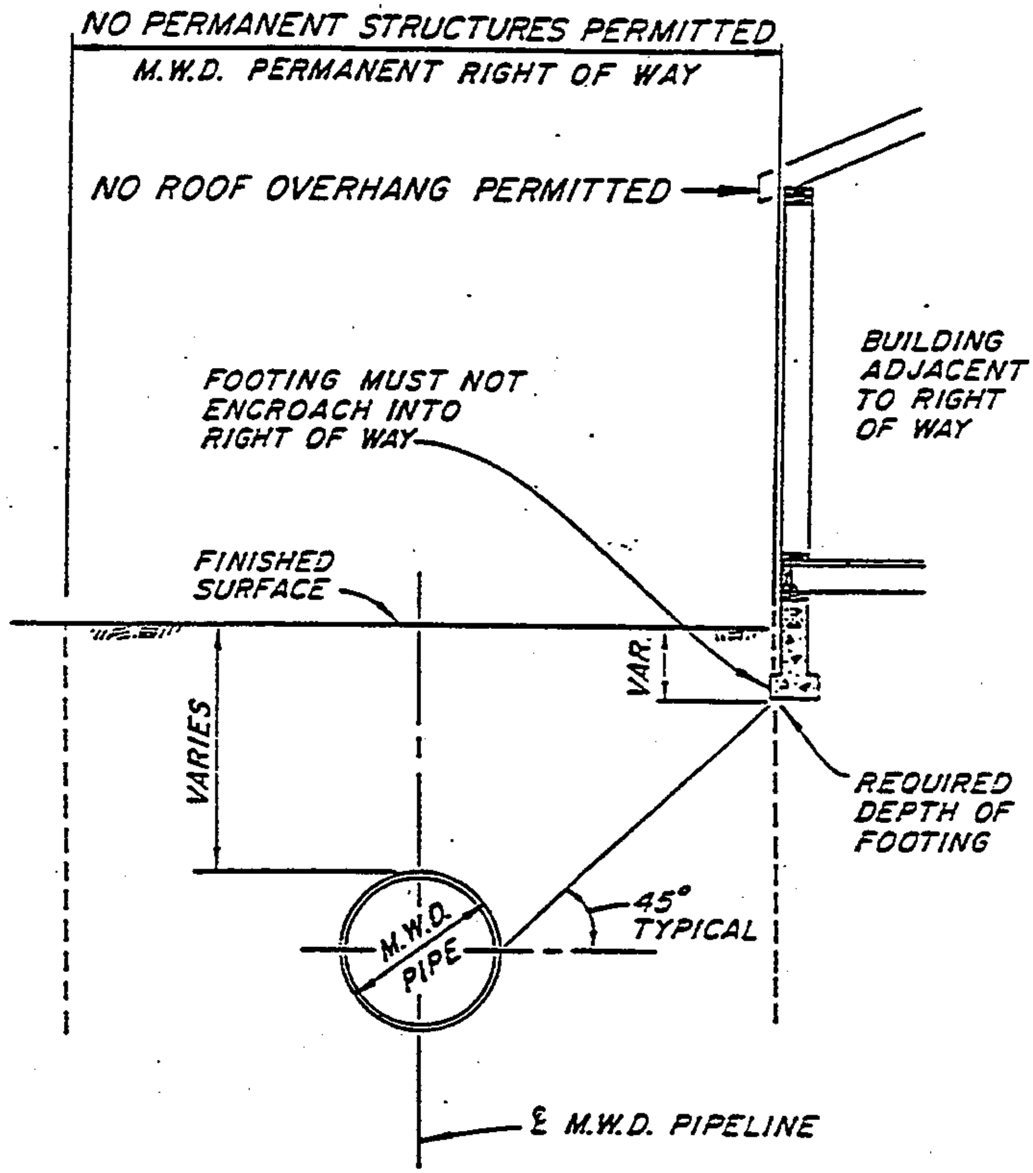


THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

REQUIRED CONSTRUCTION WIDTHS

DRAWN............ RECOMMENDED............
TRACED............
CHECKED............ APPROVED............

FIGURE 1



NOTE: M.W.D. PIPELINE SIZE, DEPTH, LOCATION AND WIDTH OF PERMANENT RIGHT OF WAY VARIES.

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

REQUIREMENTS FOR BUILDINGS AND FOOTINGS ADJACENT TO M.W.D. RIGHT OF WAY

DRAWN
TRACED
CHECKED
RECOMMENDED
APPROVED

FIGURE 2

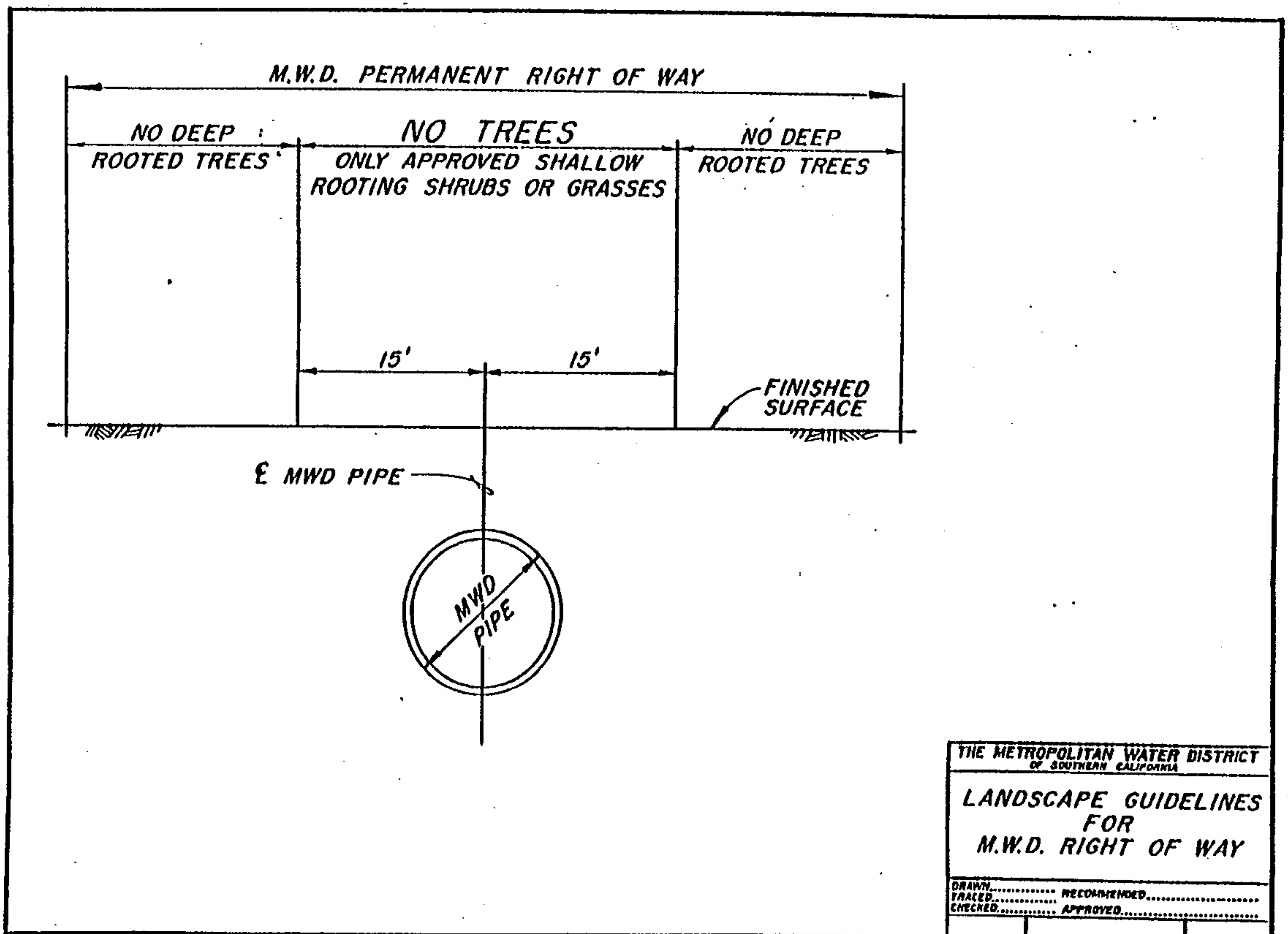

M.W.D. PERMANENT RIGHT OF WAY
NO DEEP ROOTED TREES
NO TREES
ONLY APPROVED SHALLOW ROOTING SHRUBS OR GRASSES
NO DEEP ROOTED TREES
15'
15'
FINISHED SURFACE
℄ MWD PIPE
MWD PIPE
THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA
LANDSCAPE GUIDELINES
FOR
M.W.D. RIGHT OF WAY
DRAWN..............
TRACED..............
CHECKED..............
RECOMMENDED..............
APPROVED..............

FIGURE 3

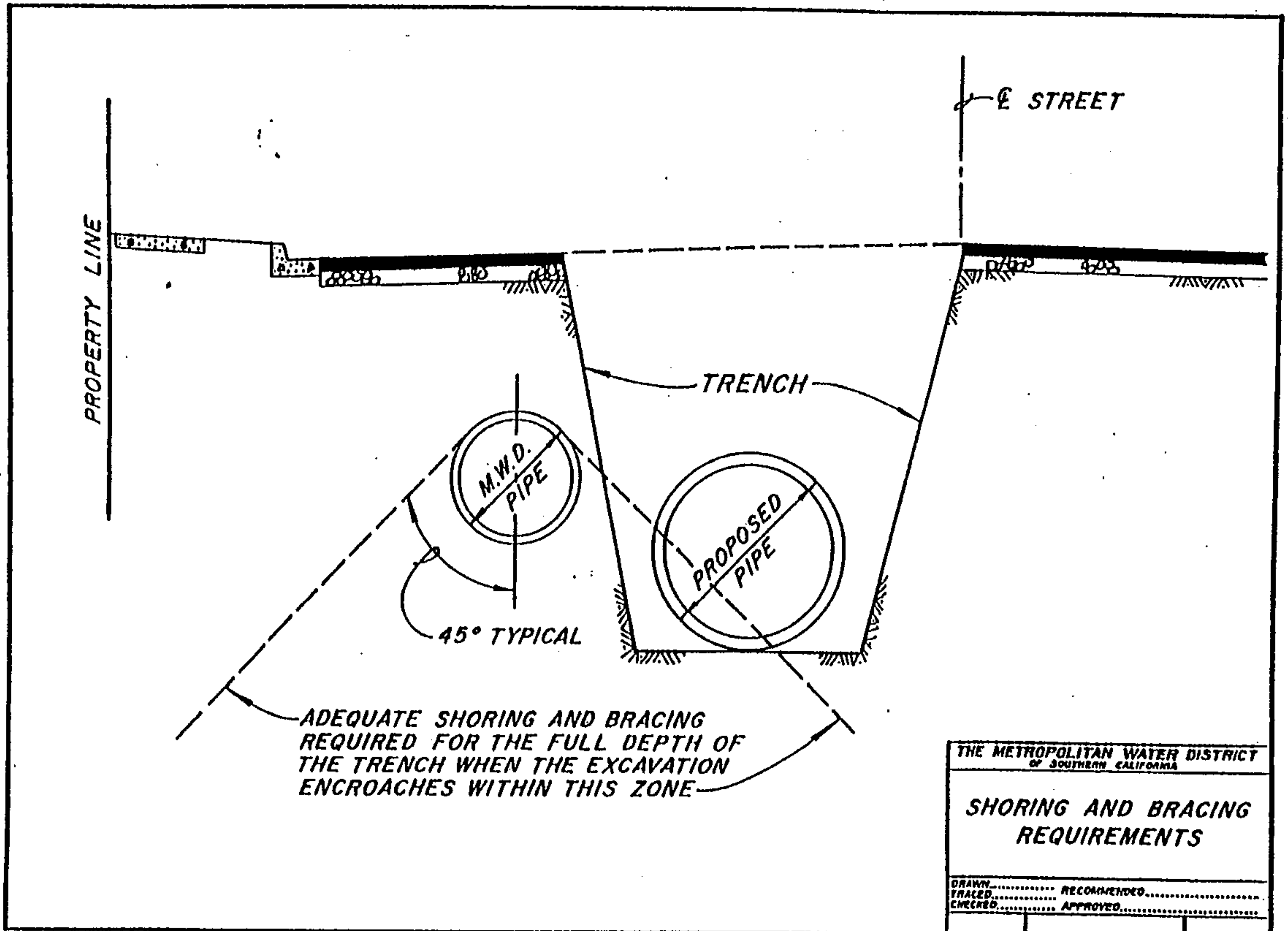
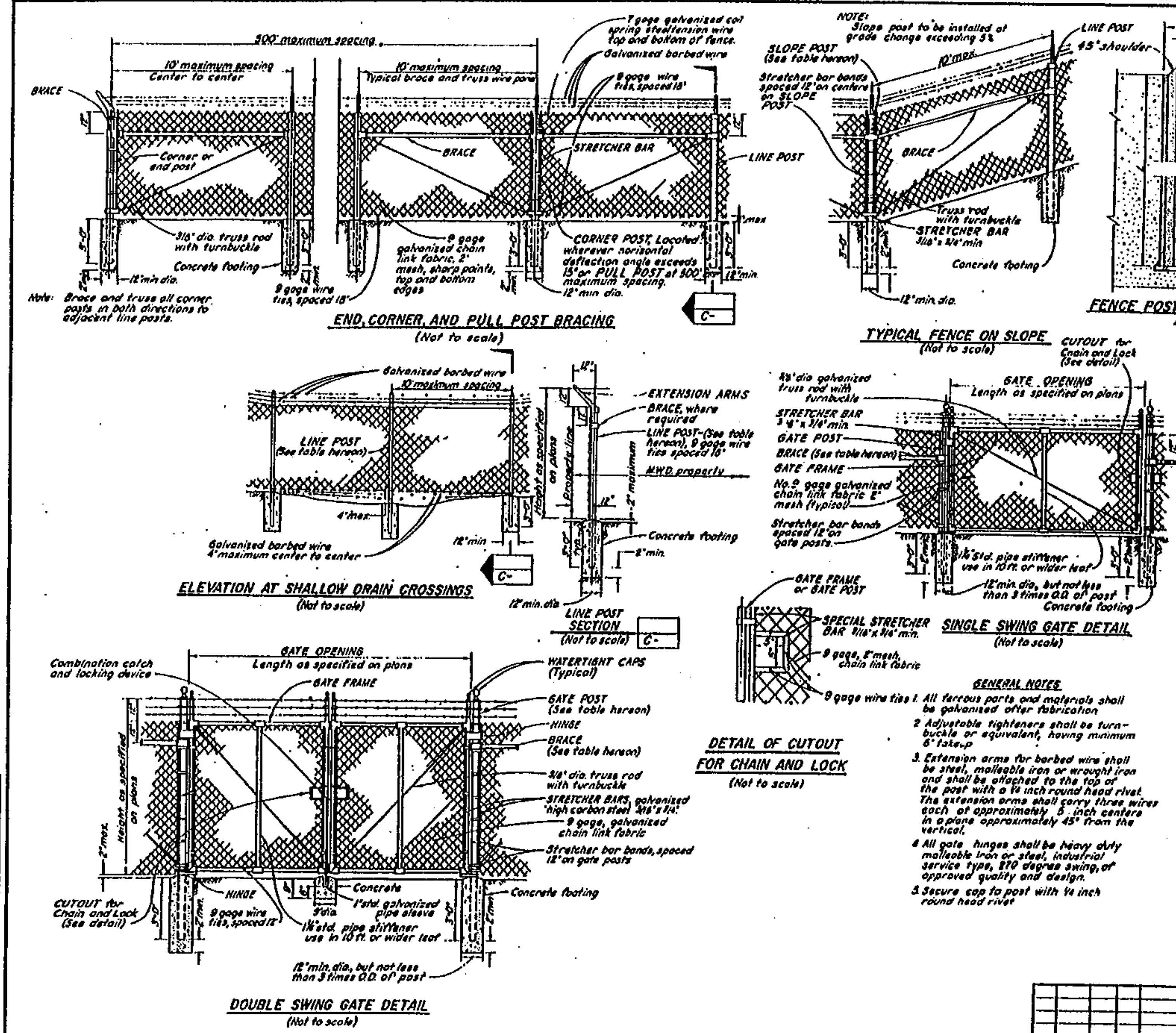

PROPERTY LINE
℄ STREET
TRENCH
M.W.D. PIPE
PROPOSED PIPE
45° TYPICAL
ADEQUATE SHORING AND BRACING REQUIRED FOR THE FULL DEPTH OF THE TRENCH WHEN THE EXCAVATION ENCROACHES WITHIN THIS ZONE
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
SHORING AND BRACING REQUIREMENTS
DRAWN............ RECOMMENDED....................
TRACED............
CHECKED............ APPROVED....................

FIGURE 4



GENERAL NOTES

1. All ferrous parts and materials shall be galvanized after fabrication
2. Adjustable tighteners shall be turnbuckle or equivalent, having minimum 6" take-up
3. Extension arms for barbed wire shall be steel, malleable iron or wrought iron and shall be attached to the top of the post with a 1/4 inch round head rivet. The extension arms shall carry three wires each at approximately 5 inch centers in a plane approximately 45° from the vertical.
4. All gate hinges shall be heavy duty malleable iron or steel, industrial service type, 270 degree swing, of approved quality and design.
5. Secure cap to post with 1/4 inch round head rivet

Use	Type	Nominal Size (Inches)	Actual O.D. (Inches)	Weight per foot (Pounds)
End, corner, slope, pull and gate posts (for single gates 6 feet or less in width and double gates 12 feet or less in width) for chain link fabric 72 inches or higher	Pipe	2 1/2	2.875	5.79
End, corner, slope, pull and gate posts (for single gates 6 feet or less in width and double gates 12 feet or less in width) for chain link fabric less than 72 inches height	Pipe	2	2.375	3.65
Gate posts for single swing gates over 6 feet but not over 13 feet in width and double swing gates over 12 feet but not over 26 feet in width.	Pipe	3 1/2	4.000	9.11
Gate posts for single swing gates over 13 feet but not over 18 feet in width and double swing gates over 26 feet but not over 36 feet in width.	Pipe	6	6.625	18.97
Gate posts for single swing gates over 18 feet in width and double swing gates over 36 feet in width	Pipe	8	8.625	24.70
Line posts for chain link fabric 72 inches or higher	Pipe	2	2.375	3.65
	H-Section	2 1/4 x 1 7/8		4.10
Line posts for chain link fabric less than 72 inches in height	Pipe	1 1/2	1.900	2.72
	H-Section	1 7/8 x 1 5/8		2.80
Braces	Pipe	1 1/4	1.660	2.27
	H-Section	1 7/8 x 1 5/8		2.80
Frame for gates	Pipe	1 1/2	1.900	2.72
Stiffeners for gates	Pipe	1 1/4	1.660	2.27

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
DISTRIBUTION SYSTEM

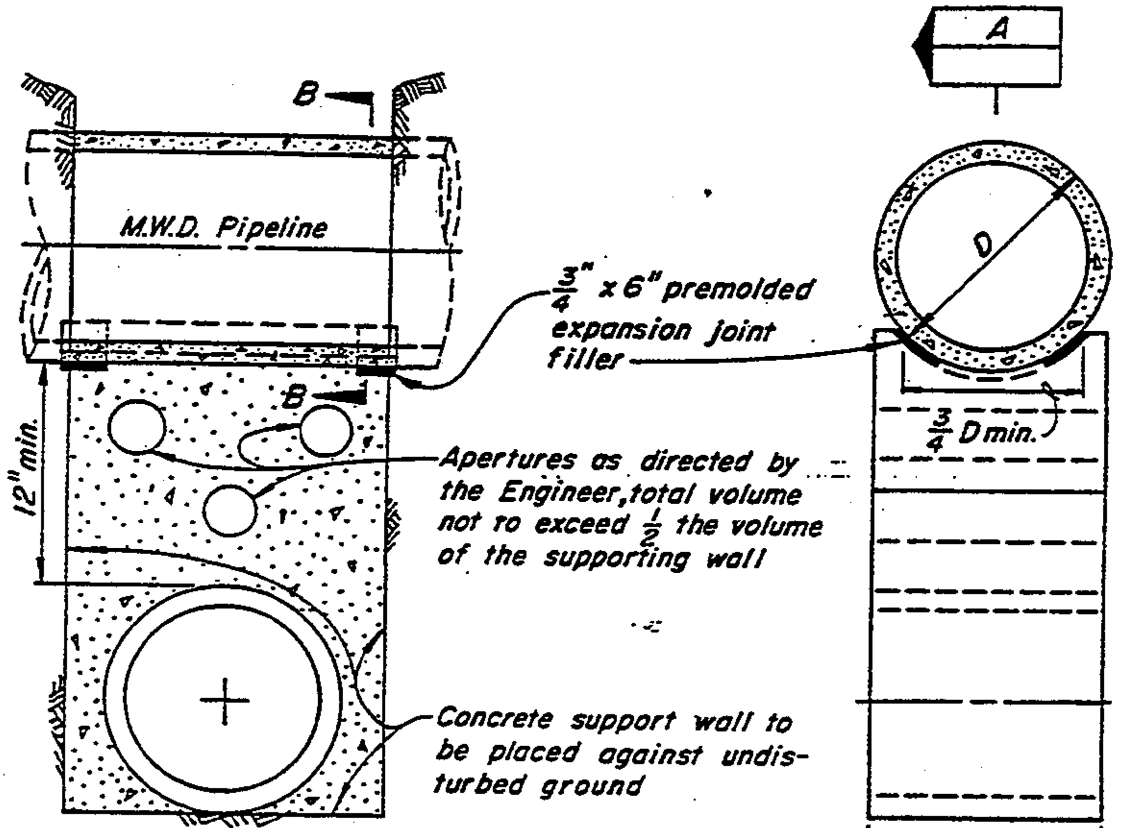
CHAIN LINK FENCE DETAILS

DESIGNED / DRAWN / CHECKED / RECOMMENDED / APPROVED / WORK ORDER NO. / LOS ANGELES

NO. | DATE | DWN. | CKD. | REVISION | REC. | APP.

REVISION COORDINATION CHECK — ORIGINAL RELEASE | MECH. | STRUCT. | ELEC. | CIVIL | SPECS. | DATE — INTERSECTIONAL COORDINATION CHECK

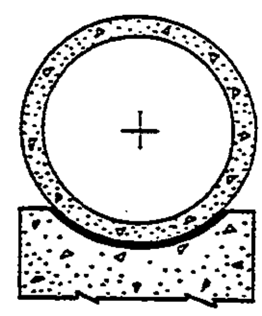
FIGURE 5



SECTION "A-A"

CROSS SECTION

1. Supporting wall shall have a firm bearing on the subgrade and against the side of the excavation.
2. Premolded expansion joint filler per ASTM D-1751-73 to be used in support for steel pipe only.
3. If trench width is 4 feet or greater, measured along centerline of M.W.D. pipe, concrete support must be constructed.
4. If trench width is less than 4 feet, clean sand backfill, compacted to 90% density in accordance with the provisions of ASTM Standard D-1557-70 may be used in lieu of the concrete support wall.



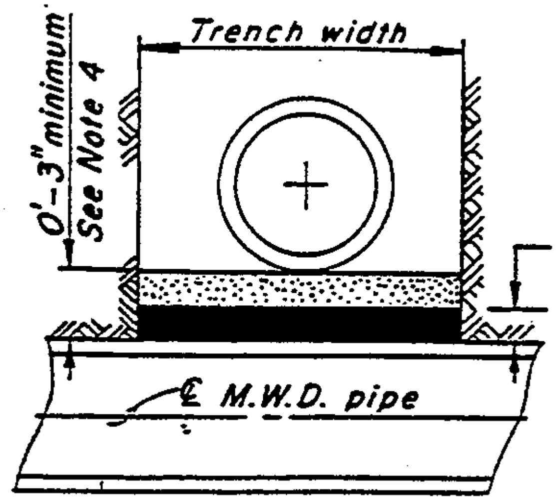
SECTION "B-B"

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

TYPICAL SUPPORT FOR M.W.D. PIPELINE

DRAWN ____ RECOMMENDED ____
TRACED ____
CHECKED ____ APPROVED ____

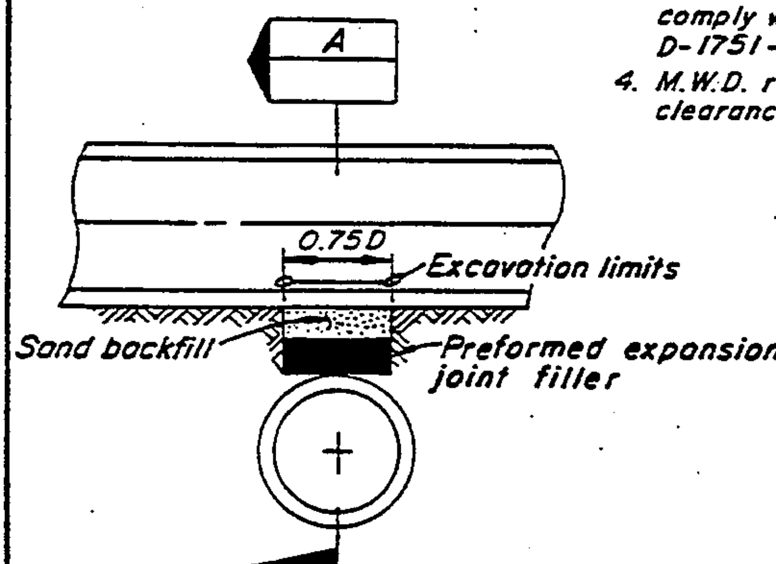
C-9547



SECTION A

NOTES

1. This method to be used where the utility line is 24" or greater in diameter and the clearance between the utility line and M.W.D. pipe is 12" or less.
2. Special protection may be required if the utility line diameter is greater than M.W.D. pipe or if the cover over the utility line to the street surface is minimal and there is 12" or less clearance between M.W.D. pipe and the utility line.
3. Preformed expansion joint filler to comply with ASTM designation D-1751-73.
4. M.W.D. requests 12" minimum clearance whenever possible.



CROSS SECTION

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

TYPICAL EXPANSION JOINT FILLER PROTECTION FOR OVERCROSSING OF M.W.D. PIPELINE

DRAWN ____ RECOMMENDED ____
TRACED ____
CHECKED ____ APPROVED ____

C-11632

Appendix C
Construction Air Emissions Evaluation

Appendix C contains the data, assumptions, and results of calculations used in estimating the air emissions associated with construction of the proposed project components. Air quality impacts of the proposed project are discussed in Section 4.1 of this document.

Air pollutant emissions from construction activities were estimated for each project component (except Onsite BMPs and Tree Planting and Mulching) by MWH, EIR consultant to LACDPW. Based on the description and sizes of the proposed facilities, MWH staff experienced with construction management made assumptions about the amount of earthwork, types and number of construction equipment, duration of each phase of construction, and number of construction crew required. Peak day emissions for each project component were estimated based on the predicted maximum use of highest emissions construction equipment, plus materials delivery, other work trucks, and worker commutes.

Sources of emission factors and equations used in the calculation include the CEQA Handbook (SCAQMD, 1993) for construction equipment exhaust and PM10 emissions from earth moving activities and EMFAC 2002 Emission Factors for on-road vehicles (SCAQMD, 2003).

Estimated construction duration by project component is as follows:

- Cal Mat Pit – five months (Phase 1), six months (Interim Phase), and five months (Phase 2)
- New Park on Wentworth – one month
- Parking Lot on Sherman Way – six months
- Power Line Easement – six months
- Roscoe Elementary School – two months
- Sheldon Pit and Tujunga Wash Diversion – 13 months
- Stonehurst Elementary School – two months
- Stonehurst Park – one month
- Storm Drains – 30 months
- Strathern Pit – six months
- Street Storage – six months
- Sun Valley Middle School – five months
- Tuxford Green – three months
- Valley Steam Plant – three months (Phase 1) and seven months (Phase 2)
- Vulcan Gravel Processing Plant – three months

For those project components with construction periods lasting longer than one quarter (i.e., three months or 65 workdays), the results for the worst-case quarter are shown.

Table C-1
Cal Mat Pit – Estimated Construction Air Emissions

Emission Source	Emissions				
	CO	ROC	NOx	SOx	PM10
Grading and Excavation (lbs/quarter)	--	--	--	--	792
Construction Equipment (lbs/quarter)	2,483	283	5,319	443	322
Workers Commutes (lbs/quarter)	387	43	41	0.2	2
Delivery and Work Trucks (lbs/quarter)	542	663	71	5	21
Total Emissions (tons/quarter)	**1.71**	**0.5**	**2.7**	**0.22**	**0.57**
SCAQMD Threshold (tons/quarter)	24.75	2.5	2.5	6.75	6.75
Total Emissions (avg lbs/day)	**52**	**15**	**84**	**7**	**18**
Total Peak Day Emissions (lbs/day)	**66**	**18**	**110**	**9**	**19**
SCAQMD Threshold (avg lbs/day)	550	75	100	150	150
SIGNIFICANT?	**--**	**--**	**Yes**	**--**	**--**

Table C-2
New Park on Wentworth – Estimated Construction Air Emissions

Emission Source	Emissions				
	CO	ROC	NOx	SOx	PM10
Grading and Excavation (lbs/quarter)	--	--	--	--	63
Construction Equipment (lbs/quarter)	638	119	989	89	48
Workers Commutes (lbs/quarter)	31	3	3	0.02	0
Delivery and Work Trucks (lbs/quarter)	29	35	4	0.3	1
Total Emissions (tons/quarter)	**0.35**	**0.1**	**0.5**	**0.04**	**0.06**
SCAQMD Threshold (tons/quarter)	24.75	2.5	2.5	6.75	6.75
Total Emissions (avg lbs/day)	**39**	**9**	**55**	**5**	**6**
Total Peak Day Emissions (lbs/day)	**56**	**12**	**78**	**7**	**7**
SCAQMD Threshold (avg lbs/day)	550	75	100	150	150
SIGNIFICANT?	**--**	**--**	**--**	**--**	**--**

Table C-3
Parking Lot on Sherman – Estimated Construction Air Emissions

Emission Source	Emissions				
	CO	ROC	NOx	SOx	PM10
Grading and Excavation (lbs/quarter)	--	--	--	--	1,109
Construction Equipment (lbs/quarter)	3,911	500	9,139	770	598
Workers Commutes (lbs/quarter)	424	47	45	0.2	3
Delivery and Work Trucks (lbs/quarter)	503	615	66	5	20
Total Emissions (tons/quarter)	**2.42**	**0.6**	**4.6**	**0.39**	**0.86**
SCAQMD Threshold (tons/quarter)	24.75	2.5	2.5	6.75	6.75
Total Emissions (avg lbs/day)	**74**	**18**	**142**	**12**	**27**
Total Peak Day Emissions (lbs/day)	**77**	**15**	**146**	**12**	**26**
SCAQMD Threshold (avg lbs/day)	550	75	100	150	150
SIGNIFICANT?	**--**	**--**	**Yes**	**--**	**--**

Table C-4
Power Line Easement – Estimated Construction Air Emissions

Emission Source	Emissions				
	CO	ROC	NOx	SOx	PM10
Grading and Excavation (lbs/quarter)	--	--	--	--	0
Construction Equipment (lbs/quarter)	13,506	2,275	17,535	1,517	971
Workers Commutes (lbs/quarter)	1,003	111	107	0.6	6
Delivery and Work Trucks (lbs/quarter)	384	469	51	4	15
Total Emissions (tons/quarter)	**7.45**	**1.4**	**8.8**	**0.76**	**0.50**
SCAQMD Threshold (tons/quarter)	24.75	2.5	2.5	6.75	6.75
Total Emissions (avg lbs/day)	**229**	**44**	**272**	**23**	**15**
Total Peak Day Emissions (lbs/day)	**247**	**44**	**289**	**25**	**17**
SCAQMD Threshold (avg lbs/day)	550	75	100	150	150
SIGNIFICANT?	**--**	**--**	**Yes**	**--**	**--**

Table C-5
Roscoe Elementary School – Estimated Construction Air Emissions

Emission Source	Emissions				
	CO	ROC	NOx	SOx	PM10
Grading and Excavation (lbs/quarter)	--	--	--	--	40
Construction Equipment (lbs/quarter)	632	111	1,336	116	84
Workers Commutes (lbs/quarter)	102	11	11	0.1	0.63
Delivery and Work Trucks (lbs/quarter)	60	73	8	1	2
Total Emissions (tons/quarter)	**0.40**	**0.1**	**0.7**	**0.06**	**0.06**
SCAQMD Threshold (tons/quarter)	24.75	2.5	2.5	6.75	6.75
Total Emissions (avg lbs/day)	**17**	**4**	**28**	**2**	**3**
Total Peak Day Emissions (lbs/day)	**29**	**10**	**68**	**6**	**4**
SCAQMD Threshold (avg lbs/day)	550	75	100	150	150
SIGNIFICANT?	**--**	**--**	**--**	**--**	**--**

Table C-6
Sheldon Pit – Estimated Construction Air Emissions

Emission Source	Emissions				
	CO	ROC	NOx	SOx	PM10
Grading and Excavation (lbs/quarter)	--	--	--	--	757
Construction Equipment (lbs/quarter)	7,150	1,544	21,965	3,177	2,603
Workers Commutes (lbs/quarter)	1,903	211	203	1	12
Delivery and Work Trucks (lbs/quarter)	20	25	3	0.2	1
Total Emissions (tons/quarter)	**4.54**	**0.9**	**11.1**	**1.59**	**1.69**
SCAQMD Threshold (tons/quarter)	24.75	2.5	2.5	6.75	6.75
Total Emissions (avg lbs/day)	**140**	**27**	**341**	**49**	**52**
Total Peak Day Emissions (lbs/day)	**143**	**31**	**341**	**49**	**52**
SCAQMD Threshold (avg lbs/day)	550	75	100	150	150
SIGNIFICANT?	**--**	**--**	**Yes**	**--**	**--**

Table C-7
Stonehurst Elementary School – Estimated Construction Air Emissions

Emission Source	Emissions				
	CO	ROC	NOx	SOx	PM10
Grading and Excavation (lbs/quarter)	--	--	--	--	48
Construction Equipment (lbs/quarter)	632	111	1,336	116	84
Workers Commutes (lbs/quarter)	102	11	11	0.1	0.6
Delivery and Work Trucks (lbs/quarter)	60	73	8	1	2
Total Emissions (tons/quarter)	**0.40**	**0.1**	**0.7**	**0.06**	**0.07**
SCAQMD Threshold (tons/quarter)	24.75	2.5	2.5	6.75	6.75
Total Emissions (avg lbs/day)	**17**	**4**	**28**	**2**	**3**
Total Peak Day Emissions (lbs/day)	**29**	**10**	**68**	**6**	**4**
SCAQMD Threshold (avg lbs/day)	550	75	100	150	150
SIGNIFICANT?	**--**	**--**	**--**	**--**	**--**

Table C-8
Stonehurst Park – Estimated Construction Air Emissions

Emission Source	Emissions				
	CO	ROC	NOx	SOx	PM10
Grading and Excavation (lbs/quarter)	--	--	--	--	69
Construction Equipment (lbs/quarter)	267	35	510	44	29
Workers Commutes (lbs/quarter)	39	4	4	0.02	0.24
Delivery and Work Trucks (lbs/quarter)	43	52	6	0.4	2
Total Emissions (tons/quarter)	**0.17**	**0.05**	**0.3**	**0.02**	**0.05**
SCAQMD Threshold (tons/quarter)	24.75	2.5	2.5	6.75	6.75
Total Emissions (avg lbs/day)	**16**	**4**	**24**	**2**	**5**
Total Peak Day Emissions (lbs/day)	**22**	**6**	**37**	**3**	**6**
SCAQMD Threshold (avg lbs/day)	550	75	100	150	150
SIGNIFICANT?	**--**	**--**	**--**	**--**	**--**

Table C-9
Storm Drains – Estimated Construction Air Emissions*

Emission Source	Emissions				
	CO	ROC	NOx	SOx	PM10
Grading and Excavation (lbs/quarter)	--	--	--	--	3,224
Construction Equipment (lbs/quarter)	8,280	1,689	18,339	1,579	984
Workers Commutes (lbs/quarter)	1,125	125	120	1	7
Delivery and Work Trucks (lbs/quarter)	957	1171	126	9	38
Total Emissions (tons/quarter)	**5.18**	**1.5**	**9.3**	**0.79**	**2.13**
SCAQMD Threshold (tons/quarter)	24.75	2.5	2.5	6.75	6.75
Total Emissions (avg lbs/day)	**159**	**46**	**286**	**24**	**65**
Total Peak Day Emissions (lbs/day)	**220**	**51**	**399**	**35**	**18**
SCAQMD Threshold (avg lbs/day)	550	75	100	150	150
SIGNIFICANT?	**--**	**--**	**Yes**	**--**	**--**

* Emissions per approximately 1.3 mile of storm drain constructed per quarter

Table C-10
Strathern Pit – Estimated Construction Air Emissions

Emission Source	Emissions				
	CO	ROC	NOx	SOx	PM10
Grading and Excavation (lbs/quarter)	--	--	--	--	317
Construction Equipment (lbs/quarter)	3,469	572	5,886	517	309
Workers Commutes (lbs/quarter)	642	71	68	0.4	4.0
Delivery and Work Trucks (lbs/quarter)	313	384	41	3	12
Total Emissions (tons/quarter)	**2.21**	**0.5**	**3.0**	**0.26**	**0.32**
SCAQMD Threshold (tons/quarter)	24.75	2.5	2.5	6.75	6.75
Total Emissions (avg lbs/day)	**68**	**16**	**92**	**8**	**10**
Total Peak Day Emissions (lbs/day)	**113**	**27**	**161**	**14**	**14**
SCAQMD Threshold (avg lbs/day)	550	75	100	150	150
SIGNIFICANT?	**--**	**--**	**Yes**	**--**	**--**

Table C-11
Street Storage – Estimated Construction Air Emissions*

Emission Source	Emissions				
	CO	ROC	NOx	SOx	PM10
Grading and Excavation (lbs/quarter)	--	--	--	--	429
Construction Equipment (lbs/quarter)	3,112	369	5,915	495	361
Workers Commutes (lbs/quarter)	982	109	105	1	6
Delivery and Work Trucks (lbs/quarter)	519	635	68	5	20
Total Emissions (tons/quarter)	**2.31**	**0.6**	**3.0**	**0.25**	**0.41**
SCAQMD Threshold (tons/quarter)	24.75	2.5	2.5	6.75	6.75
Total Emissions (avg lbs/day)	**71**	**17**	**94**	**8**	**13**
Total Peak Day Emissions (lbs/day)	**129**	**27**	**193**	**16**	**12**
SCAQMD Threshold (avg lbs/day)	550	75	100	150	150
SIGNIFICANT?	**--**	**--**	**Yes**	**--**	**--**

* Emissions for approximately 1.2 mile of roadway affected per quarter

Table C-12
Sun Valley Middle School – Estimated Construction Air Emissions

Emission Source	Emissions				
	CO	ROC	NOx	SOx	PM10
Grading and Excavation (lbs/quarter)	--	--	--	--	0
Construction Equipment (lbs/quarter)	1,769	305	2,336	204	126
Workers Commutes (lbs/quarter)	129	14	14	0	1
Delivery and Work Trucks (lbs/quarter)	49	60	6	0	2
Total Emissions (tons/quarter)	**0.97**	**0.2**	**1.2**	**0.10**	**0.06**
SCAQMD Threshold (tons/quarter)	24.75	2.5	2.5	6.75	6.75
Total Emissions (avg lbs/day)	**30**	**6**	**36**	**3**	**2**
Total Peak Day Emissions (lbs/day)	**65**	**12**	**80**	**7**	**4**
SCAQMD Threshold (avg lbs/day)	550	75	100	150	150
SIGNIFICANT?	**--**	**--**	**--**	**--**	**--**

Table C-13
Tuxford Green – Estimated Construction Air Emissions

Emission Source	Emissions				
	CO	ROC	NOx	SOx	PM10
Grading and Excavation (lbs/quarter)	--	--	--	--	26
Construction Equipment (lbs/quarter)	1,747	282	2,882	253	170
Workers Commutes (lbs/quarter)	356	40	38	0.2	2
Delivery and Work Trucks (lbs/quarter)	162	199	21	2	6
Total Emissions (tons/quarter)	**1.13**	**0.3**	**1.5**	**0.13**	**0.10**
SCAQMD Threshold (tons/quarter)	24.75	2.5	2.5	6.75	6.75
Total Emissions (avg lbs/day)	**35**	**8**	**45**	**4**	**3**
Total Peak Day Emissions (lbs/day)	**63**	**10**	**71**	**6**	**4**
SCAQMD Threshold (avg lbs/day)	550	75	100	150	150
SIGNIFICANT?	**--**	**--**	**--**	**--**	**--**

Table C-14
Valley Steam Plant – Estimated Construction Air Emissions

Emission Source	Emissions				
	CO	ROC	NOx	SOx	PM10
Grading and Excavation (lbs/quarter)	--	--	--	--	317
Construction Equipment (lbs/quarter)	1,301	154	2,808	339	233
Workers Commutes (lbs/quarter)	331	37	35	0.2	2
Delivery and Work Trucks (lbs/quarter)	396	484	52	4	16
Total Emissions (tons/quarter)	**1.01**	**0.3**	**1.4**	**0.17**	**0.28**
SCAQMD Threshold (tons/quarter)	24.75	2.5	2.5	6.75	6.75
Total Emissions (avg lbs/day)	**31**	**10**	**45**	**5**	**9**
Total Peak Day Emissions (lbs/day)	**49**	**16**	**74**	**6**	**8**
SCAQMD Threshold (avg lbs/day)	550	75	100	150	150
SIGNIFICANT?	**--**	**--**	**--**	**--**	**--**

Table C-15
Vulcan Gravel Processing Plant – Estimated Construction Air Emissions

Emission Source	Emissions				
	CO	ROC	NOx	SOx	PM10
Grading and Excavation (lbs/quarter)	--	--	--	--	317
Construction Equipment (lbs/quarter)	1,939	227	4,053	340	243
Workers Commutes (lbs/quarter)	306	34	33	0.2	2
Delivery and Work Trucks (lbs/quarter)	398	487	53	4	16
Total Emissions (tons/quarter)	**1.32**	**0.4**	**2.1**	**0.17**	**0.29**
SCAQMD Threshold (tons/quarter)	24.75	2.5	2.5	6.75	6.75
Total Emissions (avg lbs/day)	**41**	**12**	**64**	**5**	**9**
Total Peak Day Emissions (lbs/day)	**66**	**18**	**110**	**9**	**12**
SCAQMD Threshold (avg lbs/day)	550	75	100	150	150
SIGNIFICANT?	**--**	**--**	**Yes**	**--**	**--**

Table C-16
Estimated Fugitive Dust (PM10) Emissions from Earth Moving Activities

Constants	Amount	Unit	Reference
Emission Factor	26.4	lbs/acre	SCAQMD, 1993 Table A9-9 (p. A9-93)

Project Component	Total Area of Earthmoving Activities (acres/quarter)	PM 10 Emissions (lbs/quarter)
Cal Mat Pit Phase 1 - Q1 (Regrading/Fill/Lining)	30	792
New Park on Wentworth	2.4	63
Parking Lot on Sherman - Q1 (Excavation & Backfill)	42	1,109
Roscoe Elementary School	1.5	40
Sheldon Pit	29	757
Stonehurst Elementary School	1.8	48
Stonehurst Park	2.6	69
Strathern Pit (Q1, 2, or 3)	12	317
Street Storage - One Quarter	16	429
Tuxford Green	1	26
Valley Steam Plant Phase 2 (Excavation/Lining) Q1	12	317
Vulcan Gravel Processing Plant (Excavation/Lining)	12	317

Assumptions for calculation of fugitive dust emissions from construction of Storm Drains:

- 1.3 mile of pipeline constructed per quarter
- 36,600 cy (equivalent to 50,000 tons) of excavation and 20,000 cy (equivalent to 27,000 tons) of backfill per quarter
- Emission factors = 0.058 lbs per ton of material for excavation; 0.012 lbs per ton of material for backfill (per assumptions used in the EIR for Project 9250; LACDPW, 1995)
- PM10 emissions from excavation and backfill = (50,000 tons x 0.058 lbs/ton) + (27,000 tons x 0.012 lbs/ton) = 2,900 lbs + 324 lbs **= 3,224 lbs per quarter**

Table C-17
Estimated Vehicle Exhaust Emissions from Construction Worker Commutes

Constants	Amount	Unit	Reference
Emission Factor (CO)	0.01815	lbs/mi	Emission Factor for Passenger Vehicles, Year 2003 Scenario (SCAMQD, 2003)
Emission Factor (ROC)	0.002014	lbs/mi	Emission Factor for Passenger Vehicles, Year 2003 Scenario (SCAMQD, 2003)
Emission Factor (NOx)	0.001935	lbs/mi	Emission Factor for Passenger Vehicles, Year 2003 Scenario (SCAMQD, 2003)
Emission Factor (SOx)	0.00001	lbs/mi	Emission Factor for Passenger Vehicles, Year 2003 Scenario (SCAMQD, 2003)
Emission Factor (PM10)	0.000112	lbs/mi	Emission Factor for Passenger Vehicles, Year 2003 Scenario (SCAMQD, 2003)
Worker Trip Length	10.5	miles	SCAQMD, 1993 (Table A9-5-D (p. A9-24))
Number of Worker Trips	1.30	one-way trip/day	SCAQMD, 1993 (Table A9-5-A-2 (p. A9-22))

Project Component	Activity	No. of Workers	Duration (days)	Emissions (lbs/quarter)				
				CO	ROC	NOx	SOx	PM10
Cal Mat Pit Phase 1 - Q1	Regrading	12	40	237.8	26.39	25.36	0.13	1.47
Cal Mat Pit Phase 1 - Q1	Fill/Lining	7	25	86.7	9.62	9.24	0.05	0.54
Cal Mat Pit Phase 1 - Q1	Catch Basins	1	9	4.5	0.49	0.48	0.00	0.03
Cal Mat Pit Phase 1 - Q1	Catch Basins	2	45	44.6	4.95	4.75	0.02	0.28
Cal Mat Pit Phase 1 - Q1	Catch Basins	1	27	13.4	1.48	1.43	0.01	0.08
Cal Mat Pit Phase 1 - Q1	**TOTAL**			**387.0**	**42.94**	**41.26**	**0.21**	**2.39**
New Park on Wentworth	Excavation	4	6	11.9	1.32	1.27	0.01	0.07
New Park on Wentworth	Catch Basins	1	1	0.5	0.05	0.05	0.00	0.00
New Park on Wentworth	Catch Basins	2	5	5.0	0.55	0.53	0.00	0.03
New Park on Wentworth	Catch Basins	1	3	1.5	0.16	0.16	0.00	0.01
New Park on Wentworth	Landscaping	2	7	6.9	0.77	0.74	0.00	0.04
New Park on Wentworth	Landscaping	1	5	2.5	0.27	0.26	0.00	0.02
New Park on Wentworth	Landscaping	1	5	2.5	0.27	0.26	0.00	0.02
New Park on Wentworth	**TOTAL**			**30.7**	**3.41**	**3.28**	**0.02**	**0.19**
Parking Lot on Sherman - Q1	Excavation	8	40	158.6	17.59	16.90	0.09	0.98
Parking Lot on Sherman - Q1	Infiltration Devices	12	25	148.6	16.49	15.85	0.08	0.92
Parking Lot on Sherman - Q1	Infiltration Devices	2	5	5.0	0.55	0.53	0.00	0.03
Parking Lot on Sherman - Q1	Backfill	9	25	111.5	12.37	11.89	0.06	0.69
Parking Lot on Sherman - Q1	**TOTAL**			**423.6**	**47.01**	**45.17**	**0.23**	**2.61**
Power Line Easement - Q2	Drywells	35	51	884.5	98.14	94.29	0.49	5.46
Power Line Easement - Q2	Landscaping	8	30	118.9	13.20	12.68	0.07	0.73
Power Line Easement - Q2	**TOTAL**			**1,003.4**	**111.34**	**106.97**	**0.55**	**6.19**
Roscoe Elementary School	Excavation	4	10	19.8	2.20	2.11	0.01	0.12
Roscoe Elementary School	Catch Basins	1	4	2.0	0.22	0.21	0.00	0.01
Roscoe Elementary School	Catch Basins	2	20	19.8	2.20	2.11	0.01	0.12
Roscoe Elementary School	Catch Basins	1	12	5.9	0.66	0.63	0.00	0.04
Roscoe Elementary School	Landscaping	2	7	6.9	0.77	0.74	0.00	0.04
Roscoe Elementary School	Landscaping	2	5	5.0	0.55	0.53	0.00	0.03
Roscoe Elementary School	Infiltration Devices	8	10	39.6	4.40	4.23	0.02	0.24

Table C-17 (Continued)
Estimated Vehicle Exhaust Emissions from Construction Worker Commutes

Project Component	Activity	No. of Workers	Duration (days)	Emissions (lbs/quarter)				
				CO	ROC	NOx	SOx	PM10
Roscoe Elementary School	Infiltration Devices	1	2	1.0	0.11	0.11	0.00	0.01
Roscoe Elementary School	Separators	4	1	2.0	0.22	0.21	0.00	0.01
Roscoe Elementary School	**TOTAL**			**102.1**	**11.33**	**10.88**	**0.06**	**0.63**
Sheldon Pit - Q1, Q2, and Q3	Regrading	10	64	317.1	35.19	33.81	0.17	1.96
Sheldon Pit - Q1, Q2, and Q3	Regrading	40	64	1,268.5	140.75	135.23	0.70	7.83
Sheldon Pit - Q1, Q2, and Q3	Regrading	10	64	317.1	35.19	33.81	0.17	1.96
Sheldon Pit - Q1, Q2, and Q3	**TOTAL**			**1,902.7**	**211.13**	**202.85**	**1.05**	**11.74**
Stonehurst Elementary School	Excavation	4	10	19.8	2.20	2.11	0.01	0.12
Stonehurst Elementary School	Catch Basins	1	4	2.0	0.22	0.21	0.00	0.01
Stonehurst Elementary School	Catch Basins	2	20	19.8	2.20	2.11	0.01	0.12
Stonehurst Elementary School	Catch Basins	1	12	5.9	0.66	0.63	0.00	0.04
Stonehurst Elementary School	Landscaping	2	7	6.9	0.77	0.74	0.00	0.04
Stonehurst Elementary School	Landscaping	2	5	5.0	0.55	0.53	0.00	0.03
Stonehurst Elementary School	Infiltration Devices	8	10	39.6	4.40	4.23	0.02	0.24
Stonehurst Elementary School	Infiltration Devices	1	2	1.0	0.11	0.11	0.00	0.01
Stonehurst Elementary School	Separators	4	1	2.0	0.22	0.21	0.00	0.01
Stonehurst Elementary School	**TOTAL**			**102.1**	**11.33**	**10.88**	**0.06**	**0.63**
Stonehurst Park	Excavation	4	10	19.8	2.20	2.11	0.01	0.12
Stonehurst Park	Catch Basins	1	1	0.5	0.05	0.05	0.00	0.00
Stonehurst Park	Catch Basins	2	5	5.0	0.55	0.53	0.00	0.03
Stonehurst Park	Catch Basins	1	3	1.5	0.16	0.16	0.00	0.01
Stonehurst Park	Landscaping	2	7	6.9	0.77	0.74	0.00	0.04
Stonehurst Park	Landscaping	2	5	5.0	0.55	0.53	0.00	0.03
Stonehurst Park	**TOTAL**			**38.6**	**4.29**	**4.12**	**0.02**	**0.24**
Storm Drains	Excavation	36	15	267.6	29.69	28.53	0.15	1.65
Storm Drains	Pipeline 11-16'	40	23	455.9	50.58	48.60	0.25	2.81
Storm Drains	Pipeline 30-96"	40	16	317.1	35.19	33.81	0.17	1.96
Storm Drains	Backfill	9	14	62.4	6.93	6.66	0.03	0.39
Storm Drains	Paving	15	3	22.3	2.47	2.38	0.01	0.14
Storm Drains	**TOTAL**			**1,125.3**	**124.86**	**119.97**	**0.62**	**6.94**
Strathern Pit - Q1	Regrading	8	25	99.1	11.00	10.57	0.05	0.61
Strathern Pit - Q1	Catch Basins	1	35	17.3	1.92	1.85	0.01	0.11
Strathern Pit - Q1	Catch Basins	10	65	322.1	35.74	34.34	0.18	1.99
Strathern Pit - Q1	Catch Basins	5	40	99.1	11.00	10.57	0.05	0.61
Strathern Pit - Q1	Pipeline	6	35	104.1	11.55	11.09	0.06	0.64
Strathern Pit - Q1	**TOTAL**			**641.7**	**71.20**	**68.41**	**0.35**	**3.96**
Street Storage	Excavation	8	19	73.6	8.17	7.85	0.04	0.45
Street Storage	Paving	15	14	103.5	11.49	11.04	0.06	0.64
Street Storage	Infiltration Devices	10	16	80.5	8.93	8.58	0.04	0.50

Table C-17 (Continued)
Estimated Vehicle Exhaust Emissions from Construction Worker Commutes

Project Component	Activity	No. of Workers	Duration (days)	Emissions (lbs/quarter)				
				CO	ROC	NOx	SOx	PM10
Street Storage	Infiltration Devices	40	33	644.1	71.48	68.67	0.35	3.97
Street Storage	Infiltration Devices	10	16	80.5	8.93	8.58	0.04	0.50
Street Storage	**TOTAL**			**982.3**	**109.00**	**104.73**	**0.54**	**6.06**
Sun Valley Middle School - Q2	Drywells	1	29	14.4	1.59	1.53	0.01	0.09
Sun Valley Middle School - Q2	Drywells	1	27	13.4	1.48	1.43	0.01	0.08
Sun Valley Middle School - Q2	Drywells	1	27	13.4	1.48	1.43	0.01	0.08
Sun Valley Middle School - Q2	Drywells	4	29	57.5	6.38	6.13	0.03	0.35
Sun Valley Middle School - Q2	Planter	6	5	14.9	1.65	1.58	0.01	0.09
Sun Valley Middle School - Q2	Planter	1	1	0.5	0.05	0.05	0.00	0.00
Sun Valley Middle School - Q2	Fencing	1	2	1.0	0.11	0.11	0.00	0.01
Sun Valley Middle School - Q2	Landscaping	2	8	7.9	0.88	0.85	0.00	0.05
Sun Valley Middle School - Q2	Landscaping	2	6	5.9	0.66	0.63	0.00	0.04
Sun Valley Middle School - Q2	**TOTAL**			**128.8**	**14.30**	**13.73**	**0.07**	**0.79**
Tuxford Green	Excavation	4	25	49.5	5.50	5.28	0.03	0.31
Tuxford Green	Catch Basins	2	12	11.9	1.32	1.27	0.01	0.07
Tuxford Green	Catch Basins	8	60	237.8	26.39	25.36	0.13	1.47
Tuxford Green	Catch Basins	2	24	23.8	2.64	2.54	0.01	0.15
Tuxford Green	Storage Tanks	1	5	2.5	0.27	0.26	0.00	0.02
Tuxford Green	Storage Tanks	1	10	5.0	0.55	0.53	0.00	0.03
Tuxford Green	Storage Tanks	2	10	9.9	1.10	1.06	0.01	0.06
Tuxford Green	Storage Tanks	1	10	5.0	0.55	0.53	0.00	0.03
Tuxford Green	Storage Tanks	2	5	5.0	0.55	0.53	0.00	0.03
Tuxford Green	Landscaping	2	4	4.0	0.44	0.42	0.00	0.02
Tuxford Green	Landscaping	2	2	2.0	0.22	0.21	0.00	0.01
Tuxford Green	**TOTAL**			**356.3**	**39.53**	**37.98**	**0.20**	**2.20**
Valley Steam Plant Phase 2 - Q1	Excavation	12	21	124.9	13.86	13.31	0.07	0.77
Valley Steam Plant Phase 2 - Q1	Lining	13	25	161.0	17.87	17.17	0.09	0.99
Valley Steam Plant Phase 2 - Q1	Tank Cleaning	1	12	5.9	0.66	0.63	0.00	0.04
Valley Steam Plant Phase 2 - Q1	Tank Cleaning	2	40	39.6	4.40	4.23	0.02	0.24
Valley Steam Plant Phase 2 - Q1	**TOTAL**			**331.5**	**36.78**	**35.34**	**0.18**	**2.05**
Vulcan Gravel Processing Plant	Excavation	6	30	89.2	9.90	9.51	0.05	0.55
Vulcan Gravel Processing Plant	Excavation	3	30	44.6	4.95	4.75	0.02	0.28
Vulcan Gravel Processing Plant	Excavation	3	30	44.6	4.95	4.75	0.02	0.28
Vulcan Gravel Processing Plant	Fill/Lining	7	14	48.6	5.39	5.18	0.03	0.30
Vulcan Gravel Processing Plant	Pump Station	5	15	37.2	4.12	3.96	0.02	0.23
Vulcan Gravel Processing Plant	Pipeline	6	14	41.6	4.62	4.44	0.02	0.26
Vulcan Gravel Processing Plant	**TOTAL**			**305.7**	**33.92**	**32.59**	**0.17**	**1.89**

Table C-18
Estimated Vehicle Exhaust Emissions from Materials Delivery and Work Trucks

Constants	Amount	Unit	Reference
Emission Factor (CO)	0.025508	lbs/mi	Emission Factor for Delivery Trucks, Year 2003 Scenario (SCAMQD, 2003)
Emission Factor (ROC)	0.031208	lbs/mi	Emission Factor for Delivery Trucks, Year 2003 Scenario (SCAMQD, 2003)
Emission Factor (NOx)	0.003362	lbs/mi	Emission Factor for Delivery Trucks, Year 2003 Scenario (SCAMQD, 2003)
Emission Factor (SOx)	0.000241	lbs/mi	Emission Factor for Delivery Trucks, Year 2003 Scenario (SCAMQD, 2003)
Emission Factor (PM10)	0.001003	lbs/mi	Emission Factor for Delivery Trucks, Year 2003 Scenario (SCAMQD, 2003)

Project Component	Activity	Type of Vehicle	No. of Vehicles	No. of Days in Use	Hours per Day in Use	Material Deliveries			Work Trucks	Total Miles Travelled	Emissions (lbs/quarter)				
						No. of Trips per Hour	No. of Trips per Quarter	Length of Trip, One Way (miles)	Vehicle Speed (Miles Per Hour)		CO	ROC	NOx	SOx	PM10
Cal Mat Pit Phase 1 - Q1	Regrading	Haul Trucks	6	40	8	6	11,520	1	--	11,520	294	360	39	2.8	12
Cal Mat Pit Phase 1 - Q1	Regrading	Water Truck	3	40	8	--	--	--	5	4,800	122	150	16	1.2	5
Cal Mat Pit Phase 1 - Q1	Fill/Lining	Haul Trucks	2	25	8	6	2,400	1	--	2,400	61	75	8	0.6	2
Cal Mat Pit Phase 1 - Q1	Fill/Lining	Water Wagons	2	25	8	--	--	--	5	2,000	51	62	7	0.5	2
Cal Mat Pit Phase 1 - Q1	Catch Basins	Concrete Truck	1	9	2	--	--	--	5	90	2	3	0	0.0	0
Cal Mat Pit Phase 1 - Q1	Catch Basins	Work Trucks	1	45	2	--	--	--	5	450	11	14	2	0.1	0
Cal Mat Pit Phase 1 - Q1	**TOTAL**										**542**	**663**	**71**	**5**	**21**
New Park on Wentworth	Excavation	Haul Trucks	2	6	8	6	576	1	--	576	15	18	1.9	0.14	0.58
New Park on Wentworth	Excavation	Water Trucks	1	6	8	--	--	--	5	240	6	7	0.8	0.06	0.24
New Park on Wentworth	Catch Basins	Work Trucks	1	5	2	--	--	--	5	50	1	2	0.2	0.01	0.05
New Park on Wentworth	Catch Basins	Concrete Truck	1	1	2	--	--	--	5	10	0	0	0.0	0.00	0.01
New Park on Wentworth	Landscaping	Delivery Trucks	1	5	4	6	120	1	--	120	3	4	0.4	0.03	0.12
New Park on Wentworth	Landscaping	Work Trucks	1	7	4	--	--	--	5	140	4	4	0.5	0.03	0.14
New Park on Wentworth	**TOTAL**										**29**	**35**	**4**	**0**	**1**
Parking Lot on Sherman - Q1	Excavation	Haul Trucks	4	40	8	6	7,680	1	--	7,680	196	240	26	1.9	8
Parking Lot on Sherman - Q1	Excavation	Water Trucks	2	40	8	--	--	--	5	3,200	82	100	11	0.8	3
Parking Lot on Sherman - Q1	Infiltration Devices	Delivery Trucks	2	5	4	6	240	1	--	240	6	7	1	0.1	0
Parking Lot on Sherman - Q1	Infiltration Devices	Work Trucks	4	25	4	--	--	--	5	2,000	51	62	7	0.5	2
Parking Lot on Sherman - Q1	Backfill	Haul Trucks	3	25	8	6	3,600	1	--	3,600	92	112	12	0.9	4
Parking Lot on Sherman - Q1	Backfill	Water Trucks	3	25	8	--	--	--	5	3,000	77	94	10	0.7	3
Parking Lot on Sherman - Q1	**TOTAL**										**503**	**615**	**66**	**5**	**20**
Power Line Easement - Q2	Drywells	Delivery Trucks	5	51	2	6	3,060	1	--	3,060	78	95	10	0.7	3
Power Line Easement - Q2	Drywells	Work Trucks	10	51	2	--	--	--	5	5,100	130	159	17	1.2	5
Power Line Easement - Q2	Landscaping	Delivery Trucks	2	30	4	6	1,440	1	--	1,440	37	45	5	0.3	1
Power Line Easement - Q2	Landscaping	Work Trucks	2	30	4	--	--	--	5	1,200	31	37	4	0.3	1
Power Line Easement - Q2	**TOTAL**										**275**	**337**	**36**	**3**	**11**
Roscoe Elementary School	Excavation	Haul Trucks	2	10	8	6	960	1	--	960	24	30	3	0.2	1
Roscoe Elementary School	Excavation	Water Trucks	1	10	8	--	--	--	5	400	10	12	1	0.1	0
Roscoe Elementary School	Catch Basins	Concrete Truck	1	4	2	--	--	--	5	40	1	1	0	0.0	0
Roscoe Elementary School	Catch Basins	Work Trucks	1	20	2	--	--	--	5	200	5	6	1	0.0	0
Roscoe Elementary School	Landscaping	Work Trucks	1	7	4	--	--	--	5	140	4	4	0	0.0	0
Roscoe Elementary School	Landscaping	Delivery Trucks	1	5	4	6	120	1	--	120	3	4	0	0.0	0
Roscoe Elementary School	Infiltration Devices	Delivery Trucks	1	2	4	6	48	1	--	48	1	1	0	0.0	0
Roscoe Elementary School	Infiltration Devices	Work Trucks	2	10	4	--	--	--	5	400	10	12	1	0.1	0
Roscoe Elementary School	Separators	Work Trucks	2	1	4	--	--	--	5	40	1	1	0	0.0	0
Roscoe Elementary School	**TOTAL**										**60**	**73**	**8**	**1**	**2**

Table C-18 (Continued)
Estimated Vehicle Exhaust Emissions from Materials Delivery and Work Trucks

Project Component	Activity	Type of Vehicle	No. of Vehicles	No. of Days in Use	Hours per Day in Use	Material Deliveries			Work Trucks	Total Miles Travelled	Emissions (lbs/quarter)				
						No. of Trips per Hour	No. of Trips per Quarter	Length of Trip, One Way (miles)	Vehicle Speed (Miles Per Hour)		CO	ROC	NOx	SOx	PM10
Sheldon Pit - Q1, Q2, and Q3	Regrading	Water Trucks	3	64	8	--	--	--	5	7,680	196	240	26	1.9	8
Sheldon Pit - Q1, Q2, and Q3	**TOTAL**										**196**	**240**	**26**	**1.9**	**8**
Stonehurst Elementary School	Excavation	Haul Trucks	2	10	8	6	960	1	--	960	24	30	3	0.2	1
Stonehurst Elementary School	Excavation	Water Trucks	1	10	8	--	--	--	5	400	10	12	1	0.1	0
Stonehurst Elementary School	Catch Basins	Concrete Truck	1	4	2	--	--	--	5	40	1	1	0	0.0	0
Stonehurst Elementary School	Catch Basins	Work Trucks	1	20	2	--	--	--	5	200	5	6	1	0.0	0
Stonehurst Elementary School	Landscaping	Work Trucks	1	7	4	--	--	--	5	140	4	4	0	0.0	0
Stonehurst Elementary School	Landscaping	Delivery Trucks	1	5	4	6	120	1	--	120	3	4	0	0.0	0
Stonehurst Elementary School	Infiltration Devices	Delivery Trucks	1	2	4	6	48	1	--	48	1	1	0	0.0	0
Stonehurst Elementary School	Infiltration Devices	Work Trucks	2	10	4	--	--	--	5	400	10	12	1	0.1	0
Stonehurst Elementary School	Separators	Work Trucks	2	1	4	--	--	--	5	40	1	1	0	0.0	0
Stonehurst Elementary School	**TOTAL**										**60**	**73**	**8**	**1**	**2**
Stonehurst Park	Excavation	Haul Trucks	2	10	8	6	960	1	--	960	24	30	3	0.2	1
Stonehurst Park	Excavation	Water Trucks	1	10	8	--	--	--	5	400	10	12	1	0.1	0
Stonehurst Park	Catch Basins	Concrete Truck	1	1	2	--	--	--	5	10	0	0	0	0.0	0
Stonehurst Park	Catch Basins	Work Trucks	1	5	2	--	--	--	5	50	1	2	0	0.0	0
Stonehurst Park	Landscaping	Work Trucks	1	7	4	--	--	--	5	140	4	4	0	0.0	0
Stonehurst Park	Landscaping	Delivery Trucks	1	5	4	6	120	1	--	120	3	4	0	0.0	0
Stonehurst Park	**TOTAL**										**43**	**52**	**6**	**0**	**2**
Storm Drains	Excavation	Haul Trucks	12	15	8	6	8,640	1	--	8,640	220	270	29	2.1	9
Storm Drains	Excavation	Water Trucks	6	15	8	--	--	--	7	5,040	129	157	17	1.2	5
Storm Drains	Excavation	Work Trucks	6	15	2	--	--	--	7	1,260	32	39	4	0.3	1
Storm Drains	Pipeline 11-16'	Delivery Trucks	5	23	8	6	5,520	1	--	5,520	141	172	19	1.3	6
Storm Drains	Pipeline 11-16'	Work Trucks	15	23	2	--	--	--	7	4,830	123	151	16	1.2	5
Storm Drains	Pipeline 30-96"	Delivery Trucks	5	16	8	6	3,840	1	--	3,840	98	120	13	0.9	4
Storm Drains	Pipeline 30-96"	Work Trucks	15	16	2	--	--	--	7	3,360	86	105	11	0.8	3
Storm Drains	Backfill	Haul Trucks	3	14	8	6	2,016	1	--	2,016	51	63	7	0.5	2
Storm Drains	Backfill	Water Trucks	3	14	8	--	--	--	7	2,352	60	73	8	0.6	2
Storm Drains	Paving	Delivery Trucks	4	3	8	6	576	1	--	576	15	18	2	0.1	1
Storm Drains	Paving	Work Trucks	2	3	2	--	--	--	7	84	2	3	0	0.0	0
Storm Drains	**TOTAL**										**957**	**1171**	**126**	**9**	**38**
Strathern Pit - Q2	Catch Basins	Work Trucks	5	45	2	--	--	--	5	2,250	57	70	8	0.5	2
Strathern Pit - Q2	Landscaping	Work Trucks	1	32	4	--	--	--	5	640	16	20	2	0.2	1
Strathern Pit - Q2	Landscaping	Delivery Trucks	1	30	4	6	720	1	--	720	18	22	2	0.2	1
Strathern Pit - Q2	Pipeline	Delivery Trucks	1	35	4	--	--	--	5	700	18	22	2	0.2	1
Strathern Pit - Q2	Pipeline	Work Trucks	2	35	2	6	840	1	--	840	21	26	3	0.2	1
Strathern Pit - Q2	Pump Station 150 hp	Work Trucks	2	10	2	6	240	1	--	240	6	7	1	0.1	0
Strathern Pit - Q2	Pump Station 1 hp	Work Trucks	2	3	2	6	72	1	--	72	2	2	0	0.0	0
Strathern Pit - Q2	**TOTAL**										**139**	**170**	**18**	**1**	**5**

Table C-18 (Continued)
Estimated Vehicle Exhaust Emissions from Materials Delivery and Work Trucks

Project Component	Activity	Type of Vehicle	No. of Vehicles	No. of Days in Use	Hours per Day in Use	Material Deliveries			Work Trucks	Total Miles Travelled	Emissions (lbs/quarter)				
						No. of Trips per Hour	No. of Trips per Quarter	Length of Trip, One Way (miles)	Vehicle Speed (Miles Per Hour)		CO	ROC	NOx	SOx	PM10
Street Storage	Excavation	Haul Trucks	4	19	8	6	3,566	1	--	3,566	91	111	12	0.9	4
Street Storage	Excavation	Water Trucks	2	19	8	--	--	--	5	1,486	38	46	5	0.4	1
Street Storage	Paving	Delivery Trucks	4	14	8	6	2,674	1	--	2,674	68	83	9	0.6	3
Street Storage	Paving	Work Trucks	2	14	2	--	--	--	5	279	7	9	1	0.1	0
Street Storage	Infiltration Devices	Work Trucks	20	33	2	--	--	--	6	7,800	199	243	26	1.9	8
Street Storage	Infiltration Devices	Concrete Trucks	10	16	4	--	--	--	7	4,550	116	142	15	1.1	5
Street Storage	**TOTAL**										**519**	**635**	**68**	**5**	**20**
Sun Valley Middle School - Q2	Drywells	Delivery Trucks	1	27	2	6	324	1	--	324	8	10	1	0.1	0
Sun Valley Middle School - Q2	Drywells	Work Trucks	2	29	2	--	--	--	5	580	15	18	2	0.1	1
Sun Valley Middle School - Q2	Planter	Work Trucks	3	5	8	--	--	--	5	600	15	19	2	0.1	1
Sun Valley Middle School - Q2	Planter	Concrete Trucks	1	1	4	--	--	--	5	20	1	1	0	0.0	0
Sun Valley Middle School - Q2	Fencing	Light Duty Trucks	1	2	8	--	--	--	5	80	2	2	0	0.0	0
Sun Valley Middle School - Q2	Landscaping	Work Trucks	1	8	4	--	--	--	5	160	4	5	1	0.0	0
Sun Valley Middle School - Q2	Landscaping	Delivery Trucks	1	6	4	6	144	1	--	144	4	4	0	0.0	0
Sun Valley Middle School - Q2	**TOTAL**										**49**	**60**	**6**	**0.5**	**2**
Valley Steam Plant Phase 2 - Q1	Excavation	Haul Trucks	6	21	8	6	6,048	1	--	6,048	154	189	20	1	6
Valley Steam Plant Phase 2 - Q1	Excavation	Water Trucks	3	21	8	--	--	--	5	2,520	64	79	8	1	3
Valley Steam Plant Phase 2 - Q1	Lining	Haul Trucks	4	25	8	6	4,800	1	--	4,800	122	150	16	1	5
Valley Steam Plant Phase 2 - Q1	Lining	Water Trucks	2	25	8	--	--	--	5	2,000	51	62	7	0	2
Valley Steam Plant Phase 2 - Q2	Tank Cleaning	Delivery Trucks	1	12	2	6	144	1	--	144	4	4	0	0	0
Valley Steam Plant Phase 2 - Q1	**TOTAL**										**396**	**484**	**52**	**4**	**16**
Vulcan Gravel Processing Plant	Excavation	Haul Trucks	6	30	8	6	8,640	1	--	8,640	220	270	29	2.1	9
Vulcan Gravel Processing Plant	Excavation	Water Trucks	3	30	8	--	--	--	5	3,600	92	112	12	0.9	4
Vulcan Gravel Processing Plant	Fill/Lining	Haul Trucks	2	14	8	6	1,344	1	--	1,344	34	42	5	0.3	1
Vulcan Gravel Processing Plant	Fill/Lining	Water Trucks	2	14	8	--	--	--	5	1,120	29	35	4	0.3	1
Vulcan Gravel Processing Plant	Pump Station	Work Trucks	2	15	2	--	--	--	5	300	8	9	1	0.1	0
Vulcan Gravel Processing Plant	Pipeline	Work Trucks	2	14	2	--	--	--	5	280	7	9	1	0.1	0
Vulcan Gravel Processing Plant	Pipeline	Delivery Trucks	1	14	4	6	336	1	--	336	9	10	1	0.1	0
Vulcan Gravel Processing Plant	**TOTAL**										**398**	**487**	**53**	**4**	**16**

Table C-19
Estimated Emissions from Construction Equipment Tailpipe Emissions

Constants	Amount	Unit	Reference
Emission Factors	Columns I, K, M, O, and Q	lbs/hr	SCAQMD, 1993 (Table A9-8-A (p. A9-82), for Diesel)
Emission Factors	Columns I, K, M, O, and Q	lbs/hp-hr	SCAQMD, 1993 (Table A9-8-B (p. A9-83) for Diesel)

Project Component	Activity	Equipment Type	No. of Equipment	Approx. horsepower	Estimated Use		CO		ROC		NOx		SOx		PM10		Emission Factor Unit
					days	hrs/day	Emission Factor	Emissions (lbs/qtr)	Emission Factor	Emissions (lbs/qtr)	Emission Factor	Emissions (lbs/qtr)	Emission Factor	Emissions (lbs/qtr)	Emission Factor	Emissions (lbs/qtr)	
Cal Mat Pit Phase 1 - Q1	Excavation	Excavator	3	188	40	8	0.011	1,985	0.001	180	0.024	4,332	0.002	361	0.0015	271	lbs/hp-hr
Cal Mat Pit Phase 1 - Q1	Fill/Lining	Roller	3	--	25	8	0.3	180	0.065	39	0.87	522	0.067	40	0.05	30	lbs/hr
Cal Mat Pit Phase 1 - Q1	Catch Basins	Backhoe	1	98	27	8	0.015	318	0.003	64	0.022	466	0.002	42	0.001	21	lbs/hp-hr
Cal Mat Pit Phase 1 - Q1	**TOTAL**							**2,483**		**283**		**5,319**		**443**		**322**	
New Park on Wentworth	Excavation	Excavator	1	188	6	6	0.011	74	0.001	7	0.024	162	0.002	14	0.0015	10	lbs/hp-hr
New Park on Wentworth	Catch Basins	Backhoe	1	98	3	8	0.015	35	0.003	7	0.022	52	0.002	5	0.001	2	lbs/hp-hr
New Park on Wentworth	Landscape	Backhoe	8	110	5	8	0.015	528	0.003	106	0.022	774	0.002	70	0.001	35	lbs/hp-hr
New Park on Wentworth	**TOTAL**							**638**		**119**		**989**		**89**		**48**	
Parking Lot on Sherman - Q1	Excavation	Excavator	4	188	40	8	0.011	2,647	0.001	241	0.024	5,775	0.002	481	0.0015	361	lbs/hp-hr
Parking Lot on Sherman - Q1	Infiltration Devices 1	Excavator	2	188	25	6	0.011	620	0.001	56	0.024	1,354	0.002	113	0.0015	85	lbs/hp-hr
Parking Lot on Sherman - Q1	Infiltration Devices 1	Loader	4	--	25	6	0.572	343	0.23	138	1.9	1,140	0.182	109	0.17	102	lbs/hr
Parking Lot on Sherman - Q1	Infiltration Devices 1	Roller	2	--	25	8	0.3	120	0.065	26	0.87	348	0.067	27	0.05	20	lbs/hr
Parking Lot on Sherman - Q1	Backfill 1	Roller	3	--	25	8	0.3	180	0.065	39	0.87	522	0.067	40	0.05	30	lbs/hr
Parking Lot on Sherman - Q1	**TOTAL**							**3,911**		**500**		**9,139**		**770**		**598**	
Power Line Easement - Q2	Drywells	Drill Rig	5	209	51	8	0.02	8527	0.003	1279	0.024	10233	0.002	853	0.0015	640	lbs/hp-hr
Power Line Easement - Q2	Drywells	Backhoe	5	98	51	8	0.015	2,999	0.003	600	0.022	4,398	0.002	400	0.001	200	lbs/hp-hr
Power Line Easement - Q2	Landscape	Backhoe	5	110	30	8	0.015	1,980	0.003	396	0.022	2,904	0.002	264	0.001	132	lbs/hp-hr
Power Line Easement - Q2	**TOTAL**							**13,506**		**2,275**		**17,535**		**1,517**		**971**	
Roscoe Elementary School	Excavation	Excavator	1	188	10	8	0.011	165	0.001	15	0.024	361	0.002	30	0.0015	23	lbs/hp-hr
Roscoe Elementary School	Catch Basins	Backhoe	1	98	12	8	0.015	141	0.003	28	0.022	207	0.002	19	0.001	9	lbs/hp-hr
Roscoe Elementary School	Landscape	Backhoe	1	110	5	8	0.015	66	0.003	13	0.022	97	0.002	9	0.001	4	lbs/hp-hr
Roscoe Elementary School	Infiltration Devices	Excavator	1	188	10	6	0.011	124	0.001	11	0.024	271	0.002	23	0.0015	17	lbs/hp-hr
Roscoe Elementary School	Infiltration Devices	Loader	2	--	10	6	0.572	69	0.23	28	1.9	228	0.182	22	0.17	20	lbs/hr
Roscoe Elementary School	Infiltration Devices	Roller	1	--	10	8	0.3	24	0.065	5	0.87	70	0.067	5	0.05	4	lbs/hr
Roscoe Elementary School	Oil Separator	Crane (60-ton)	1	365	1	8	0.009	26	0.003	9	0.023	67	0.002	6	0.0015	4	lbs/hp-hr
Roscoe Elementary School	Oil Separator	Excavator	1	188	1	8	0.011	17	0.001	2	0.024	36	0.002	3	0.0015	2	lbs/hp-hr
Roscoe Elementary School	**TOTAL**							**632**		**111**		**1,336**		**116**		**84**	
Sheldon Pit - Q1, Q2, and Q3	Regrading	Wheeled Dozer	3	--	65	8	0	0	0	0	0	0	0.35	546	0.165	257	lbs/hr
Sheldon Pit - Q1, Q2, and Q3	Regrading	Scraper	11	--	65	8	1.25	7,150	0.27	1,544	3.84	21,965	0.46	2,631	0.41	2,345	lbs/hr
Sheldon Pit - Q1, Q2, and Q3	**TOTAL**							**7,150**		**1,544**		**21,965**		**3,177**		**2,603**	

Table C-19 (Continued)
Estimated Emissions from Construction Equipment Tailpipe Emissions

Project Component	Activity	Equipment Type	No. of Equipment	Approx. horsepower	Estimated Use		CO		ROC		NOx		SOx		PM10		Emission Factor Unit
					days	hrs/day	Emission Factor	Emissions (lbs/qtr)	Emission Factor	Emissions (lbs/qtr)	Emission Factor	Emissions (lbs/qtr)	Emission Factor	Emissions (lbs/qtr)	Emission Factor	Emissions (lbs/qtr)	
Stonehurst Elementary School	Excavation	Excavator	1	188	10	8	0.011	165	0.001	15	0.024	361	0.002	30	0.0015	23	lbs/hp-hr
Stonehurst Elementary School	Catch Basins	Backhoe	1	98	12	8	0.015	141	0.003	28	0.022	207	0.002	19	0.001	9	lbs/hp-hr
Stonehurst Elementary School	Landscape	Backhoe	1	110	5	8	0.015	66	0.003	13	0.022	97	0.002	9	0.001	4	lbs/hp-hr
Stonehurst Elementary School	Infiltration Devices	Excavator	1	188	10	6	0.011	124	0.001	11	0.024	271	0.002	23	0.0015	17	lbs/hp-hr
Stonehurst Elementary School	Infiltration Devices	Loader	2	--	10	6	0.572	69	0.23	28	1.9	228	0.182	22	0.17	20	lbs/hr
Stonehurst Elementary School	Infiltration Devices	Roller	1	--	10	8	0.3	24	0.065	5	0.87	70	0.067	5	0.05	4	lbs/hr
Stonehurst Elementary School	Oil Separator	Crane (60-ton)	1	365	1	8	0.009	26	0.003	9	0.023	67	0.002	6	0.0015	4	lbs/hp-hr
Stonehurst Elementary School	Oil Separator	Excavator	1	188	1	8	0.011	17	0.001	2	0.024	36	0.002	3	0.0015	2	lbs/hp-hr
Stonehurst Elementary School	**TOTAL**							**632**		**111**		**1,336**		**116**		**84**	
Stonehurst Park	Excavation	Excavator	1	188	10	8	0.011	165	0.001	15	0.024	361	0.002	30	0.0015	23	lbs/hp-hr
Stonehurst Park	Catch Basins	Backhoe	1	98	3	8	0.015	35	0.003	7	0.022	52	0.002	5	0.001	2	lbs/hp-hr
Stonehurst Park	Landscape	Backhoe	1	110	5	8	0.015	66	0.003	13	0.022	97	0.002	9	0.001	4	lbs/hp-hr
Stonehurst Park	**TOTAL**							**267**		**35**		**510**		**44**		**29**	
Storm Drains	Excavation	Excavator	6	188	15	8	0.011	1,489	0.001	135	0.024	3,249	0.002	271	0.0015	203	lbs/hp-hr
Storm Drains	Pipeline 11-16'	Crawler Crane (100-ton)	5	430	23	8	0.011	4,352	0.002	791	0.023	9,099	0.002	791	0.001	396	lbs/hp-hr
Storm Drains	Pipeline 30-96"	Hyd. Crane 55 ton	5	365	16	8	0.009	2,102	0.003	701	0.023	5,373	0.002	467	0.0015	350	lbs/hp-hr
Storm Drains	Backfill	Roller	3	--	14	8	0.3	101	0.065	22	0.87	292	0.067	23	0.05	17	lbs/hr
Storm Drains	Paving	Backhoe	2	98	3	8	0.015	71	0.003	14	0.022	103	0.002	9	0.001	5	lbs/hp-hr
Storm Drains	Paving	Roller/Paver	2	--	3	8	0.3	14	0.065	3	0.87	42	0.067	3	0.05	2	lbs/hr
Storm Drains	Paving	Smooth Drum Compactor	3	105	3	8	0.02	151	0.003	23	0.024	181	0.002	15	0.0015	11	lbs/hp-hr
Storm Drains	**TOTAL**							**8,280**		**1,689**		**18,339**		**1,579**		**984**	
Strathern Pit - Q1	Excavation	Excavator	2	188	25	8	0.011	827	0.001	75	0.024	1,805	0.002	150	0.0015	113	lbs/hp-hr
Strathern Pit - Q1	Catch Basins	Backhoe	5	98	40	8	0.015	2,352	0.003	470	0.022	3,450	0.002	314	0.001	157	lbs/hp-hr
Strathern Pit - Q1	Pipeline	Excavator	1	94	35	8	0.011	290	0.001	26	0.024	632	0.002	53	0.0015	39	lbs/hp-hr
Strathern Pit - Q1	**TOTAL**							**3,469**		**572**		**5,886**		**517**		**309**	

Table C-19 (Continued)
Estimated Emissions from Construction Equipment Tailpipe Emissions

Project Component	Activity	Equipment Type	No. of Equipment	Approx. horsepower	Estimated Use		CO		ROC		NOx		SOx		PM10		Emission Factor Unit
					days	hrs/day	Emission Factor	Emissions (lbs/qtr)	Emission Factor	Emissions (lbs/qtr)	Emission Factor	Emissions (lbs/qtr)	Emission Factor	Emissions (lbs/qtr)	Emission Factor	Emissions (lbs/qtr)	
Street Storage	Excavation	Excavator	2	188	19	8	0.011	614	0.001	56	0.024	1,341	0.002	112	0.0015	84	lbs/hp-hr
Street Storage	Paving	Backhoe	2	98	14	8	0.015	328	0.003	66	0.022	480	0.002	44	0.001	22	lbs/hp-hr
Street Storage	Paving	Roller/Paver	2	--	14	8	0.3	67	0.065	14	0.87	194	0.067	15	0.05	11	lbs/hr
Street Storage	Paving	Smooth Drum Compactor	3	105	14	8	0.02	702	0.003	105	0.024	842	0.002	70	0.0015	53	lbs/hp-hr
Street Storage	Infiltration Units	Excavator	10	98	16	8	0.011	1,401	0.001	127	0.024	3,058	0.002	255	0.0015	191	lbs/hp-hr
Street Storage	**TOTAL**							**3,112**		**369**		**5,915**		**495**		**361**	
Sun Valley Middle School - Q2	Drywells	Drill Rig	1	209	29	8	0.02	970	0.003	145	0.024	1164	0.002	97	0.0015	73	lbs/hp-hr
Sun Valley Middle School - Q2	Drywells	Backhoe	1	225	27	8	0.015	729	0.003	146	0.022	1,069	0.002	97	0.001	49	lbs/hp-hr
Sun Valley Middle School - Q2	Landscape	Backhoe	1	98	6	8	0.015	71	0.003	14	0.022	103	0.002	9	0.001	5	lbs/hp-hr
Sun Valley Middle School - Q2	**TOTAL**							**1,769**		**305**		**2,336**		**204**		**126**	
Tree Planting	Tree Planting	Backhoe Loader	1	48	1	8	0.015	6	0.003	1	0.022	8	0.002	1	0.0015	1	lbs/hp-hr
Tree Planting	**TOTAL**							**6**		**1**		**8**		**1**		**1**	
Tuxford Green	Excavation	Excavator	1	188	25	8	0.011	414	0.001	38	0.024	902	0.002	75	0.0015	56	lbs/hp-hr
Tuxford Green	Catch Basins	Backhoe	2	98	24	8	0.015	564	0.003	113	0.022	828	0.002	75	0.001	38	lbs/hp-hr
Tuxford Green	Storage Tanks	Crane (60-ton)	1	365	5	2	0.009	33	0.003	11	0.023	84	0.002	7	0.0015	5	lbs/hp-hr
Tuxford Green	Storage Tanks	Drill Rig	1	370	10	8	0.02	592	0.003	88.8	0.024	710.4	0.002	59.2	0.0015	44.4	lbs/hp-hr
Tuxford Green	Storage Tanks	Loader (Wheeled)	1	--	10	8	0.572	46	0.23	18	1.9	152	0.182	15	0.17	14	lbs/hr
Tuxford Green	Storage Tanks	Dump truck	2	--	5	4	1.8	72	0.19	7.6	4.17	166.8	0.45	18	0.26	10	lbs/hr
Tuxford Green	Landscape	Backhoe	1	110	2	8	0.015	26	0.003	5	0.022	39	0.002	4	0.001	2	lbs/hp-hr
Tuxford Green	**TOTAL**							**1,747**		**282**		**2,882**		**253**		**170**	
Valley Steam Plant Phase 2 - Q1	Excavation	Excavator	3	188	21	8	0.011	1,042	0.001	95	0.024	2,274	0.002	190	0.0015	142	lbs/hp-hr
Valley Steam Plant Phase 2 - Q1	Lining	Wheeled Dozer	2	--	21	8	0	0	0	0	0	0	0.35	118	0.165	55	lbs/hr
Valley Steam Plant Phase 2 - Q1	Tank Cleaning	Air Compressor	1	50	40	8	0.011	176	0.002	32	0.018	288	0.002	32	0.001	16	lbs/hp-hr
Valley Steam Plant Phase 2 - Q1	Tank Cleaning	Forklift (175 hp)	1	--	40	4	0.52	83	0.17	27	1.54	246	0	0	0.123	20	lbs/hr
Valley Steam Plant Phase 2 - Q1	**TOTAL**							**1,301**		**154**		**2,808**		**339**		**233**	
Vulcan Gravel Processing Plant	Excavation	Excavator	3	188	30	8	0.011	1,489	0.001	135	0.024	3,249	0.002	271	0.0015	203	lbs/hp-hr
Vulcan Gravel Processing Plant	Fill/Lining	Roller	3	--	14	8	0.3	101	0.065	22	0.87	292	0.067	23	0.05	17	lbs/hr
Vulcan Gravel Processing Plant	Pumps and Station	Backhoe	1	110	14	8	0.015	185	0.003	37	0.022	271	0.002	25	0.001	12	lbs/hp-hr
Vulcan Gravel Processing Plant	Pipeline	Backhoe	1	98	14	8	0.015	165	0.003	33	0.022	241	0.002	22	0.001	11	lbs/hp-hr
Vulcan Gravel Processing Plant	**TOTAL**							**1,939**		**227**		**4,053**		**340**		**243**	

Table C-20
Estimated Peak Day Fugitive Dust (PM10) Emissions from Earth Moving Activities

Constants	Amount	Unit	Reference
Emission Factor	26.4	lbs/acre/day	SCAQMD, 1993 Table A9-9 (p. A9-93)

Project Component	Total Area of Earthmoving Activities (acres/quarter)	PM 10 Emissions (lbs/quarter)	PM 10 Emissions (lbs/day)	Construction Duration (days)
Cal Mat Pit Phase 1 - Q1 (Regrading/Fill/Lining)	30	792	12	65
New Park on Wentworth	2.4	63	4	18
Parking Lot on Sherman - Q1 (Excavation & Backfill)	42	1,109	17	65
Sheldon Pit	29	757	12	65
Stonehurst Park	2.6	69	3	22
Strathern Pit	12	317	5	65
Valley Steam Plant Phase 1 (Excavation/Lining)	7	185	3	54
Vulcan Gravel Processing Plant (Excavation/Lining)	12	317	5	65

Table C-21
Estimated Peak Day Vehicle Exhaust Emissions from Construction Worker Commutes

Constants	Amount	Unit	Reference
Emission Factor (CO)	0.01815	lbs/mi	Emission Factor for Passenger Vehicles, Year 2003 Scenario (SCAMQD, 2003)
Emission Factor (ROC)	0.002014	lbs/mi	Emission Factor for Passenger Vehicles, Year 2003 Scenario (SCAMQD, 2003)
Emission Factor (NOx)	0.001935	lbs/mi	Emission Factor for Passenger Vehicles, Year 2003 Scenario (SCAMQD, 2003)
Emission Factor (SOx)	0.00001	lbs/mi	Emission Factor for Passenger Vehicles, Year 2003 Scenario (SCAMQD, 2003)
Emission Factor (PM10)	0.000112	lbs/mi	Emission Factor for Passenger Vehicles, Year 2003 Scenario (SCAMQD, 2003)
Worker Trip Length	10.5	miles	SCAQMD, 1993 (Table A9-5-D (p. A9-24))
Number of Worker Trips	1.30	one-way trip/day	SCAQMD, 1993 (Table A9-5-A-2 (p. A9-22))

Project Component	Activity	No. of Workers	Duration (days)	Emissions (lbs/quarter)				
				CO	ROC	NOx	SOx	PM10
Cal Mat Pit Phase 1 - Q1	Regrading	12	1	5.9	0.66	0.63	0.003	0.037
Cal Mat Pit Phase 1 - Q1	**TOTAL**			**5.9**	**0.66**	**0.63**	**0.003**	**0.037**
New Park on Wentworth	Landscaping	4	1	2.0	0.22	0.21	0.001	0.012
New Park on Wentworth	**TOTAL**			**2.0**	**0.22**	**0.21**	**0.001**	**0.012**
Parking Lot on Sherman - Q1	Excavation	8	1	4.0	0.44	0.42	0.002	0.024
Parking Lot on Sherman - Q1	**TOTAL**			**4.0**	**0.44**	**0.42**	**0.002**	**0.024**
Power Line Easement - Q2	Drywells	35	1	17.3	1.92	1.85	0.010	0.107
Power Line Easement - Q2	**TOTAL**			**17.3**	**1.92**	**1.85**	**0.010**	**0.107**
Roscoe Elementary School	Separators	4	1	2.0	0.22	0.21	0.001	0.012
Roscoe Elementary School	**TOTAL**			**2.0**	**0.22**	**0.21**	**0.001**	**0.012**
Sheldon Pit - Q1, Q2, and Q3	Regrading	60	1	29.7	3.30	3.17	0.016	0.183
Sheldon Pit - Q1, Q2, and Q3	**TOTAL**			**29.7**	**3.30**	**3.17**	**0.016**	**0.183**
Stonehurst Elementary School	Separators	4	1	2.0	0.22	0.21	0.001	0.012
Stonehurst Elementary School	**TOTAL**			**2.0**	**0.22**	**0.21**	**0.001**	**0.012**
Stonehurst Park	Excavation	4	1	2.0	0.22	0.21	0.001	0.012
Stonehurst Park	**TOTAL**			**2.0**	**0.22**	**0.21**	**0.001**	**0.012**
Storm Drains	Pipeline 11-16'	40	1	19.8	2.20	2.11	0.011	0.122
Storm Drains	**TOTAL**			**19.8**	**2.20**	**2.11**	**0.011**	**0.122**
Strathern Pit - Q1	Regrading	8	1	4.0	0.44	0.42	0.002	0.024
Strathern Pit - Q1	Catch Basins	16	1	7.9	0.88	0.85	0.004	0.049
Strathern Pit - Q1	**TOTAL**			**11.9**	**1.32**	**1.27**	**0.007**	**0.073**
Street Storage	Infiltration Devices	60	1	29.7	3.30	3.17	0.016	0.183
Street Storage	**TOTAL**			**29.7**	**3.30**	**3.17**	**0.016**	**0.183**
Sun Valley Middle School - Q2	Drywells	7	1	3.5	0.38	0.37	0.002	0.021
Sun Valley Middle School - Q2	**TOTAL**			**3.5**	**0.38**	**0.37**	**0.002**	**0.021**
Tuxford Green	Storage Tanks	7	1	3.5	0.38	0.37	0.002	0.021
Tuxford Green	**TOTAL**			**3.5**	**0.38**	**0.37**	**0.002**	**0.021**
Valley Steam Plant Phase 1	Excavation	12	1	5.9	0.66	0.63	0.003	0.037
Valley Steam Plant Phase 1	**TOTAL**			**5.9**	**0.66**	**0.63**	**0.003**	**0.037**
Vulcan Gravel Processing Plant	Excavation	12	1	5.9	0.66	0.63	0.003	0.037
Vulcan Gravel Processing Plant	**TOTAL**			**5.9**	**0.66**	**0.63**	**0.003**	**0.037**

Table C-22
Estimated Peak Day Vehicle Exhaust Emissions from Materials Delivery and Work Trucks

Constants	Amount	Unit	Reference
Emission Factor (CO)	0.025508	lbs/mi	Emission Factor for Delivery Trucks, Year 2003 Scenario (SCAMQD, 2003)
Emission Factor (ROC)	0.031208	lbs/mi	Emission Factor for Delivery Trucks, Year 2003 Scenario (SCAMQD, 2003)
Emission Factor (NOx)	0.003362	lbs/mi	Emission Factor for Delivery Trucks, Year 2003 Scenario (SCAMQD, 2003)
Emission Factor (SOx)	0.000241	lbs/mi	Emission Factor for Delivery Trucks, Year 2003 Scenario (SCAMQD, 2003)
Emission Factor (PM10)	0.001003	lbs/mi	Emission Factor for Delivery Trucks, Year 2003 Scenario (SCAMQD, 2003)

Project Component	Activity	Type of Vehicle	No. of Vehicles	No. of Days in Use	Hours per Day in Use	Material Deliveries			Work Trucks	Total Miles Travelled	Emissions (lbs/quarter)				
						No. of Trips per Hour	No. of Trips per Quarter	Length of Trip, One Way (miles)	Vehicle Speed (Miles Per Hour)		CO	ROC	NOx	SOx	PM10
Cal Mat Pit Phase 1 - Q1	Regrading	Haul Trucks	6	1	8	6	288	1	--	288	7.3	9.0	0.97	0.07	0.29
Cal Mat Pit Phase 1 - Q1	Regrading	Water Truck	3	1	8	--	--	--	5	120	3.1	3.7	0.40	0.03	0.12
Cal Mat Pit Phase 1 - Q1	**TOTAL**										**10.4**	**12.7**	**1.37**	**0.10**	**0.41**
New Park on Wentworth	Landscaping	Delivery Trucks	1	1	4	6	24	1	--	24	0.6	0.7	0.08	0.01	0.02
New Park on Wentworth	Landscaping	Work Trucks	1	1	4	--	--	--	5	20	0.5	0.6	0.07	0.00	0.02
New Park on Wentworth	**TOTAL**										**1.1**	**1.4**	**0.15**	**0.01**	**0.04**
Parking Lot on Sherman - Q1	Excavation	Haul Trucks	4	1	8	6	192	1	--	192	4.9	6.0	0.65	0.05	0.19
Parking Lot on Sherman - Q1	Excavation	Water Trucks	2	1	8	--	--	--	5	80	2.0	2.5	0.27	0.02	0.08
Parking Lot on Sherman - Q1	**TOTAL**										**6.9**	**8.5**	**0.91**	**0.07**	**0.27**
Power Line Easement - Q2	Drywells	Delivery Trucks	5	1	2	6	60	1	--	60	1.5	1.9	0.20	0.01	0.06
Power Line Easement - Q2	Drywells	Work Trucks	10	1	2	--	--	--	5	100	2.6	3.1	0.34	0.02	0.10
Power Line Easement - Q2	**TOTAL**										**4.1**	**5.0**	**0.54**	**0.04**	**0.16**
Roscoe Elementary School	Separators	Work Trucks	2	1	4	--	--	--	5	40	1.0	1.2	0.13	0.01	0.04
Roscoe Elementary School	**TOTAL**										**1.0**	**1.2**	**0.13**	**0.01**	**0.04**
Sheldon Pit - Q1, Q2, and Q3	Regrading	Water Trucks	3	1	8	--	--	--	5	120	3.1	3.7	0.40	0.03	0.12
Sheldon Pit - Q1, Q2, and Q3	**TOTAL**										**3.1**	**3.7**	**0.40**	**0.03**	**0.12**
Stonehurst Elementary School	Separators	Work Trucks	2	1	4	--	--	--	5	40	1.0	1.2	0.13	0.01	0.04
Stonehurst Elementary School	**TOTAL**										**1.0**	**1.2**	**0.13**	**0.01**	**0.04**
Stonehurst Park	Excavation	Haul Trucks	2	1	8	6	96	1	--	96	2.4	3.0	0.32	0.02	0.10
Stonehurst Park	Excavation	Water Trucks	1	1	8	--	--	--	5	40	1.0	1.2	0.13	0.01	0.04
Stonehurst Park	**TOTAL**										**3.5**	**4.2**	**0.46**	**0.03**	**0.14**
Storm Drains	Pipeline 11-16'	Delivery Trucks	5	1	8	6	240	1	--	240	6.1	7.5	0.81	0.06	0.24
Storm Drains	Pipeline 11-16'	Work Trucks	15	1	2	--	--	--	7	210	5.4	6.6	0.71	0.05	0.21
Storm Drains	**TOTAL**										**11.5**	**14.0**	**1.51**	**0.11**	**0.45**
Strathern Pit - Q1	Regrading	Haul Trucks	4	1	8	6	192	1	--	192	4.9	6.0	0.65	0.05	0.19
Strathern Pit - Q1	Regrading	Water Trucks	2	1	8	--	--	--	5	80	2.0	2.5	0.27	0.02	0.08
Strathern Pit - Q1	Catch Basins	Concrete Trucks	1	1	4	--	--	--	5	20	0.5	0.6	0.07	0.00	0.02
Strathern Pit - Q1	Catch Basins	Work Trucks	5	1	2	--	--	--	5	50	1.3	1.6	0.17	0.01	0.05
Strathern Pit - Q1	**TOTAL**										**8.7**	**10.7**	**1.15**	**0.08**	**0.34**
Street Storage	Infiltration Devices	Work Trucks	20	1	2	--	--	--	6	240	6.1	7.5	0.81	0.06	0.24
Street Storage	Infiltration Devices	Concrete Trucks	10	1	4	--	--	--	7	280	7.1	8.7	0.94	0.07	0.28
Street Storage	**TOTAL**										**13.3**	**16.2**	**1.75**	**0.13**	**0.52**
Sun Valley Middle School - Q2	Drywells	Delivery Trucks	1	1	2	6	12	1	--	12	0.3	0.4	0.04	0.00	0.01
Sun Valley Middle School - Q2	Drywells	Work Trucks	2	1	2	--	--	--	5	20	0.5	0.6	0.07	0.00	0.02
Sun Valley Middle School - Q2	**TOTAL**										**0.8**	**1.0**	**0.11**	**0.01**	**0.03**
Tuxford Green	Storage Tanks	Work Trucks	1	1	4	--	--	--	5	20	0.5	0.6	0.07	0.00	0.02
Tuxford Green	**TOTAL**										**0.5**	**0.6**	**0.07**	**0.00**	**0.02**
Valley Steam Plant Phase 1	Excavation	Haul Trucks	6	1	8	6	288	1	--	288	7.3	9.0	0.97	0.07	0.29
Valley Steam Plant Phase 1	Excavation	Water Trucks	3	1	8	--	--	--	5	120	3.1	3.7	0.40	0.03	0.12
Valley Steam Plant Phase 1	**TOTAL**										**10.4**	**12.7**	**1.37**	**0.10**	**0.41**
Vulcan Gravel Processing Plant	Excavation	Haul Trucks	6	1	8	6	288	1	--	288	7.3	9.0	0.97	0.07	0.29
Vulcan Gravel Processing Plant	Excavation	Water Trucks	3	1	8	--	--	--	5	120	3.1	3.7	0.40	0.03	0.12
Vulcan Gravel Processing Plant	**TOTAL**										**10.4**	**12.7**	**1.37**	**0.10**	**0.41**

Table C-23
Estimated Peak Day Emissions from Construction Equipment Tailpipe Emissions

Constants	Amount	Unit	Reference
Emission Factors	See Table	lbs/hr	SCAQMD, 1993 (Table A9-8-A (p. A9-82), for Diesel)
Emission Factors	See Table	lbs/hp-hr	SCAQMD, 1993 (Table A9-8-B (p. A9-83) for Diesel)

Project Component	Activity	Equipment Type	No. of Equipment	Approx. horsepower	Estimated Use		CO		ROC		NOx		SOx		PM10		Emission Factor Unit
					days	hrs per day	Emission Factor	Emissions (lbs/qtr)	Emission Factor	Emissions (lbs/qtr)	Emission Factor	Emissions (lbs/qtr)	Emission Factor	Emissions (lbs/qtr)	Emission Factor	Emissions (lbs/qtr)	
Cal Mat Pit Phase 1 - Q1	Excavation	Excavator	3	188	1	8	0.011	50	0.001	5	0.024	108	0.002	9	0.0015	7	lbs/hp-hr
Cal Mat Pit Phase 1 - Q1	**TOTAL**							**50**		**5**		**108**		**9**		**7**	
New Park on Wentworth	Landscape	Backhoe	4	110	1	8	0.015	53	0.003	11	0.022	77	0.002	7	0.001	4	lbs/hp-hr
New Park on Wentworth	**TOTAL**							**53**		**11**		**77**		**7**		**4**	
Parking Lot on Sherman - Q1	Excavation	Excavator	4	188	1	8	0.011	66	0.001	6	0.024	144	0.002	12	0.0015	9	lbs/hp-hr
Parking Lot on Sherman - Q1	**TOTAL**							**66**		**6**		**144**		**12**		**9**	
Power Line Easement - Q2	Drywells	Drill Rig	5	209	1	8	0.02	167	0.003	25	0.024	201	0.002	17	0.0015	13	lbs/hp-hr
Power Line Easement - Q2	Drywells	Backhoe	5	98	1	8	0.015	59	0.003	12	0.022	86	0.002	8	0.001	4	lbs/hp-hr
Power Line Easement - Q2	**TOTAL**							**226**		**37**		**287**		**25**		**16**	
Roscoe Elementary School	Oil Separator	Crane (60-ton)	1	365	1	8	0.009	26	0.003	9	0.023	67	0.002	6	0.0015	4	lbs/hp-hr
Roscoe Elementary School	**TOTAL**							**26**		**9**		**67**		**6**		**4**	
Sheldon Pit - Q1, Q2, and Q3	Regrading	Wheeled Dozer	3	--	1	8	0	0	0	0	0	0	0.35	8	0.165	4	lbs/hr
Sheldon Pit - Q1, Q2, and Q3	Regrading	Scraper	11	--	1	8	1.25	110	0.27	24	3.84	338	0.46	40	0.41	36	lbs/hr
Sheldon Pit - Q1, Q2, and Q3	**TOTAL**							**110**		**24**		**338**		**49**		**40**	
Stonehurst Elementary School	Oil Separator	Crane (60-ton)	1	365	1	8	0.009	26	0.003	9	0.023	67	0.002	6	0.0015	4	lbs/hp-hr
Stonehurst Elementary School	**TOTAL**							**26**		**9**		**67**		**6**		**4**	
Stonehurst Park	Excavation	Excavator	1	188	1	8	0.011	17	0.001	2	0.024	36	0.002	3	0.0015	2	lbs/hp-hr
Stonehurst Park	**TOTAL**							**17**		**2**		**36**		**3**		**2**	
Storm Drains	Pipeline 11-16'	Crawler Crane (100-ton)	5	430	1	8	0.011	189	0.002	34	0.023	396	0.002	34	0.001	17	lbs/hp-hr
Storm Drains	**TOTAL**							**189**		**34**		**396**		**34**		**17**	
Strathern Pit - Q1	Excavation	Excavator	2	188	1	8	0.011	33	0.001	3	0.024	72	0.002	6	0.0015	5	lbs/hp-hr
Strathern Pit - Q1	Catch Basins	Backhoe	5	98	1	8	0.015	59	0.003	12	0.022	86	0.002	8	0.001	4	lbs/hp-hr
Strathern Pit - Q1	**TOTAL**							**92**		**15**		**158**		**14**		**8**	
Street Storage	Infiltration Units	Excavator	10	98	1	8	0.011	86	0.001	8	0.024	188	0.002	16	0.0015	12	lbs/hp-hr
Street Storage	**TOTAL**							**86**		**8**		**188**		**16**		**12**	
Sun Valley Middle School - Q2	Drywells	Drill Rig	1	209	1	8	0.02	33	0.003	5	0.024	40	0.002	3	0.0015	3	lbs/hp-hr
Sun Valley Middle School - Q2	Drywells	Backhoe	1	225	1	8	0.015	27	0.003	5	0.022	40	0.002	4	0.001	2	lbs/hp-hr
Sun Valley Middle School - Q2	**TOTAL**							**60**		**10**		**80**		**7**		**4**	
Tuxford Green	Storage Tanks	Drill Rig	1	370	1	8	0.02	59.2	0.003	8.88	0.024	71.04	0.002	5.92	0.0015	4.44	lbs/hp-hr
Tuxford Green	**TOTAL**							**59**		**9**		**71**		**6**		**4**	
Valley Steam Plant Phase 1	Excavation	Excavator	2	188	1	8	0.011	33	0.001	3	0.024	72	0.002	6	0.0015	5	lbs/hp-hr
Valley Steam Plant Phase 1	**TOTAL**							**33**		**3**		**72**		**6**		**5**	
Vulcan Gravel Processing Plant	Excavation	Excavator	3	188	1	8	0.011	50	0.001	5	0.024	108	0.002	9	0.0015	7	lbs/hp-hr
Vulcan Gravel Processing Plant	**TOTAL**							**50**		**5**		**108**		**9**		**7**	

Appendix D
Biological Resources Technical Report

Appendix D contains the Biological Resources Technical Report completed for the proposed project by BonTerra Consulting (2004).

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SUN VALLEY WATERSHED MANAGEMENT PLAN BIOLOGICAL TECHNICAL REPORT

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TABLE OF CONTENTS

TABLES

1.0 INTRODUCTION

The proposed Sun Valley Watershed Plan project area is located in the northeastern portion of the City of Los Angeles approximately 14 miles northwest of downtown. The project area encompasses the communities of Sun Valley and North Hollywood and is approximately bordered by Tujunga Wash on the west, Burbank-Glendale-Pasadena Airport on the east, Hansen Dam on the north, and Burbank Boulevard on the south.

In general, the Sun Valley Watershed Management Plan project area has been almost completely urbanized and/or developed for decades. Virtually all of the native vegetation types that historically occurred throughout the area have been converted to other uses by development. While land uses such as residential and commercial/retail have eliminated the potential for native vegetation types to be reestablished in these developed areas, land uses such as commercial/recreational (e.g., golf courses and parks) and industrial (e.g., gravel pits) may support relict stands of native habitat.

The proposed Sun Valley Watershed Management Plan project includes up to 13 individual project component sites, and four individual plan components located throughout the project area. These individual plan component sites include a variety of current land uses and include the following: Valley Steam Plant, Vulcan Gravel Processing Plant (Vulcan Gravel), Tuxford Green, Sun Valley Middle School, vacant lot on Wentworth, Stonehurst Park, Stonehurst Elementary School, Roscoe Elementary School, Sheldon Pit and Tujunga Wash Diversion, Cal Mat Pit, Strathern Pit, commercial parking lot on Sherman, and Los Angeles Department of Water and Power (LADWP) power line easement. The Sun Valley Watershed Management Plan also includes four individual project components in lateral storm drains, street storage, onsite Best Management Practices (BMPs), and trunk storm drains that are not located within a specific site, but are proposed to be selectively incorporated into existing development within the project area. The locations of the individual component sites are discussed in greater detail below.

Valley Steam Plant

The LADWP's Valley Steam Plant is bound by Glenoaks Boulevard to the northeast, Sheldon Street to the southeast, San Fernando Road to the southwest, and the Tujunga Wash to the northwest. The entire site covers approximately 155 acres. The Hansen Spreading Grounds is located to the northwest across Tujunga Wash. Metrolink's Antelope Valley Line parallels San Fernando Road to the southwest of the site. Boulevard Pit, an active gravel pit, is located to the west across San Fernando Road. Surrounding land uses on Sheldon Street and Glenoaks Boulevard are primarily industrial. Bradley Landfill is located to the southeast across Sheldon Street.

Access to Valley Steam Plant was not logistically possible due to the ongoing construction activities at the site; therefore, field reconnaissance was performed from adjacent areas off-site using binoculars combined with the review of recent aerial photography.

Vulcan Gravel Processing Plant

The Vulcan Materials Company (Vulcan) Gravel Processing Plant is located just north of the intersection of Tuxford Street and San Fernando Road. The 53-acre plant is bound by Tuxford Street and Bradley Avenue to the east and by San Fernando Road and Bradley Landfill to the northwest. The plant processes gravel excavated at the adjacent Boulevard Pit that is transported to the plant via conveyor belts. The plant consists of gravel processing facilities and paved open space areas in the southeast, with unpaved dirt and stockpiles in the northwest.

Access was not granted to this site; therefore, field reconnaissance was performed from adjacent areas off-site using binoculars combined with the review of recent aerial photography.

Tuxford Green

The Tuxford Green site is the triangular area bound by Tuxford Street on the west, San Fernando Road on the north, and Interstate 5 (Golden State Freeway) on the south. The approximately one-acre site is vacant.

Sun Valley Middle School

Sun Valley Middle School is located on Bakman Avenue and is bound by Sherman Way on the south, Fair Avenue on the east, and Valerio Street on the north. The school property includes permanent and temporary school buildings, a grass playing field, paved basketball/volleyball courts, a parking lot, and a wooded area in the southeast corner of the site. A grassy area is located in the northwestern portion of the site that is enclosed on three sides by the administration building, library, and cafeteria.

Lateral Storm Drains

Many of the project components would require the installation of storm drains within existing road ways in order to collect and convey storm water from the street surfaces into the stormwater storage/infiltration facilities. Once construction is complete, the roadways would be repaved and restored to their original conditions.

Vacant Lot on Wentworth

A vacant lot is present at the northwestern corner of the area bound by Wentworth Street, Wealtha Avenue, Sheldon Street, and Stonehurst Avenue. The site is approximately three acres. The vacant lot is partially fenced on the perimeter, and has scattered vegetation throughout. The Hansen Dam Golf Course and Sheldon Pit are located to the west across Wentworth Street.

Stonehurst Park

Stonehurst Recreation Center and Park (Stonehurst Park) is a City of Los Angeles neighborhood park located on Dronfield Avenue between Allegheny Street and Wicks Street. The site is approximately 13 acres. Facilities include a playground, baseball field, picnic and barbecue area, a recreation center building for indoor activities, and open lawn areas for additional picnicking, pickup soccer, softball, and other large group activities. Surrounding land uses to the northeast and northwest include single-family residential. Wicks Street to the southeast separates the park from the Cal Mat Pit.

Stonehurst Elementary School

Stonehurst Elementary School is located on Stonehurst Avenue between Fenway Street and Art Street. The school property includes school buildings, a playground, garden areas, auditorium, and a parking lot. The school is surrounded by single-family residences. Stonehurst Recreation Center and Park is located a few blocks to the west, and the Cal Mat Pit is located a block to the southwest.

Roscoe Elementary School

Roscoe Elementary School is located on Strathern Street, and is bound by San Fernando Road and White Street. The Metrolink railroad is located along San Fernando Road to the northeast of the school property. Surrounding land uses include medium- and low-density residential and commercial.

Sheldon Pit and Tujunga Wash Diversion

Sheldon Pit is an exhausted gravel pit bound by Wentworth Street to the east, Glenoaks Boulevard to the southwest, Tujunga Wash to the northwest, and Hansen Dam Golf Course to the north. Hansen Spreading Grounds is located to the west across Tujunga Wash. Sheldon Pit is currently used by the Los Angeles County Department of Public Works to recharge the groundwater basin using some of the flows from Tujunga Wash. The surface area of the site is approximately 138 acres, and the maximum depth is reported to be approximately 160 feet. In the southern portion of the site, the pit has been excavated to a level where groundwater is reported to be exposed. Sheldon Pit is used as a source and disposal location for gravel wash water for the Vulcan Gravel Processing Plant. Currently, exposed groundwater is pumped out of Sheldon Pit and used for gravel washing operations at the Vulcan Gravel Processing Plant with the resulting wash water pumped back to Sheldon Pit for disposal.

Cal Mat Pit

Cal Mat Pit occupies a site bound by Glenoaks Boulevard on the southwest, Wentworth Street on the northwest, Peoria Street on the southeast, and Dronfield Avenue on the northeast. Cal Mat Pit was an active gravel pit until the late 1980s; since then it has been used as a landfill for inert construction debris including concrete, asphalt, rock, dirt, and brick. The entire pit area is approximately 90 acres.

An approximately 30-acre area on the northeastern corner of the site, which was previously used as a disposal site for gravel wash water, is separated by a berm from the active landfill operations in the southern portion of the pit, and is currently not used for landfilling or other operations. The area is vegetated year-round and water ponds in this area during the rainy season. It appears that a small portion of the 30-acre area (the southern corner of Wicks Street and Dronfield Avenue) may not have been used for gravel excavation, landfilling, or wash water deposition, and may contain natural soils.

Strathern Pit

Strathern Pit is an exhausted gravel pit currently used as a landfill for inert materials. It is owned and operated by LA Byproducts. The site includes approximately 30 acres on the northeast corner of Strathern Street and Tujunga Avenue. The pit currently has a surface area of 12 acres and a maximum depth of approximately 80 feet. Surrounding land uses to the east and south are primarily residential. Sun Valley Park, a City of Los Angeles park, is located to the east across Fair Avenue. Another gravel pit is located to the west across Tujunga Avenue.

Commercial Parking Lot on Sherman

The commercial parking lot is bound by Sherman Way to the north, Vineland Avenue to the east, Tujunga Avenue to the West, and a Burbank Airport property to the south. The property where the commercial lot occurs includes various commercial buildings and parking spaces located around the buildings.

Power Line Easement

A LADWP above-ground electric transmission line easement passes through the southern end of the project area along Whitnall Highway. The easement width is approximately 300 feet, and the spacing between the power line towers is approximately 700 to 850 feet. Surrounding land uses along the power line are primarily residential while non-electricity related land uses within the easement consist of habitat, park, nursery, parking, and other industrial.

Street Storage

This component involves installation of underground storage tanks and other infrastructure within existing roadways in the southern portion of the project area. This individual project component would be limited to a portion of the project area south of the intersection of Interstate 5, Tuxford Street, and San Fernando Road. Street surfaces would be repaved to their original condition once project construction has been completed. The exact locations of the tanks have not been determined. The total length of roadways that would be used for street storage ranges from 0.4 to 5.1 miles, depending on the alternative.

Onsite Best Management Practices

Stormwater Best Management Practices (BMPs) are techniques and methods that manage stormwater by promoting onsite storage and infiltration and/or reducing pollutants in runoff. A wide variety of BMPs are available, including installation of cisterns, infiltrators, and dry wells, use of porous pavement, mulching, tree planting, and education. The onsite BMPs proposed would be relatively small scale and would be implemented at residential, commercial, and industrial parcels in the southern portion of the project area. Some of the storm water captured in cisterns, for example, could be reused onsite for irrigation and other non-potable uses of water, such as revegetation.

Trunk Storm Drain

The trunk storm drain would involve construction of a trunk storm drain within an existing roadways (e.g., Vineland Avenue, Vanowen Street, and Clyborn Avenue) to connect to existing storm drains located at the southern end of the project area. Flows within the trunk storm drain would ultimately be conveyed to the Los Angeles River.

2.0 FIELD SURVEY METHODOLOGIES AND CIRCUMSTANCES

General plant and wildlife surveys of the project area were conducted in July and August 2002, and February and April 2003. Plant species were identified in the field or collected for later identification. During the surveys, each habitat type was evaluated for its potential to support common species that are known or are expected to occur in the region. During the surveys, active searches for reptiles and amphibians were accomplished by systematic surveys through appropriate habitat. Active searches for reptiles and amphibians included lifting, overturning, and carefully replacing rocks and debris. Birds were identified by visual and auditory recognition. Surveys for mammals were conducted during the day and included searching for and identifying diagnostic sign, including scat, footprints, scratch-outs, dust bowls, burrows, and trails. During the surveys, the project sites were evaluated for their potential to support special status plant and wildlife species that are known or are expected to occur in the region. No focused plant or wildlife surveys were conducted during these site visits due to one or more of the following reasons: time of year, access issues, and/or lack of appropriate habitat or substrate.

Field surveys of Cal Mat Pit, Sheldon Pit, Strathern Pit, and Vulcan Gravel Processing Plant were conducted only from the fence line using binoculars, because on-site access could not be obtained from the property owners. Coordination with property owners included meetings on May 13, 2002. Subsequent to these meetings, requests were made to access the sites. Access to Cal Mat Pit and Sheldon Pit was denied by Vulcan Materials Company (letter from M. Drennan, MWH, to D. Sprague, Vulcan Materials Company dated August 29, 2002; letter from D. Sprague, to M. Drennan, dated September 5, 2002; V. Bapna, LACDPW, telecon with D. Sprague, April 8, 2004). Efforts to obtain permission from Los Angeles By-Products Co. for access to Sheldon Pit have not been successful as of October 10, 2003 (letter from J. Galizio, BonTerra Consulting to R. McAllister, Los Angeles By-Products Company dated October 8, 2003; telecon with R. McAllister, October 9, 2003) and was rejected outright on October 16, 2003 (telecom with R. McAllister, October 16, 2003).

Access to Valley Steam Plant was not logistically possible due to the ongoing construction activities at the site; field reconnaissance was performed from adjacent areas off-site using binoculars combined with the review of recent aerial photography. However, the Valley Steam Plant project component will be located within the boundaries of an existing power generating station, and the site has already been greatly disturbed. As indicated in the Initial Study prepared for the Los Angeles Department of Water and Power's Installation of a Combined Cycle Generating Facility at the Valley Generating Station (Appendix to SCAQMD, 2002), the Valley Steam Plant site does not support sensitive biological resources, including riparian habitat, wetlands, migratory corridors, and special status plants, animals or natural communities.

A literature review was conducted prior to the initiation of general surveys in order to determine the potential special status plant and wildlife species known to occur in the project area that may occur on the project sites. The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California (CNPS 2002 and 2003) and CDFG's Natural Diversity Database (CNDDB) (CDFG 2002 and 2003) were reviewed. In addition, special status species lists published by the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) were also reviewed.

3.0 EXISTING BIOLOGICAL RESOURCES

Vegetation types, wildlife populations and movement patterns, special status vegetation types, and special status plant and wildlife species either known or potentially occurring Sun Valley Watershed Plan project area are discussed below.

3.1 Vegetation Types

Vegetation types were identified within each of the individual project component sites, for which access was granted. Those areas where access was not granted were evaluated by viewing the sites from off-site areas through binoculars and by interpolating aerial photography. Urbanization in the project area has impacted native vegetation types such that the majority of the vegetated area may be described as ruderal or developed land. However, several sites support, or have the potential to support, native vegetation that potentially includes Riversidean alluvial sage scrub, coastal sage scrub, non-native grassland, mule fat scrub, and willow scrub. The following section describes each of the vegetation types observed or interpolated during field reconnaissance. Table 1 summarizes the habitats observed, or potentially occurring, on each of the individual project component sites.

TABLE 1
VEGETATION TYPES OBSERVED OR INTERPOLATED AT THE INDIVIDUAL PROJECT COMPONENT SITES

Vegetation Types	Individual Project Component Site																
	Valley Steam Plant	Vulcan Gravel Processing Plant	Tuxford Green	Sun Valley Middle School	Lateral Storm Drains	Vacant Lot on Wentworth	Stonehurst Park	Stonehurst Elementary School	Roscoe Elementary School	Sheldon Pit and Tujunga Wash Diversion	Cal Mat Pit	Strathern Pit	Commercial Parking Lot on Sherman	LADWP Power Line Easement	Street Storage	Onsite BMPs	Trunk Storm Drain
Riversidean Alluvial Fan Sage Scrub	--	P	--	--	--	--	--	--	--	P	P	P	--	--	--	--	--
Coastal Sage Scrub	--	P	--	--	--	X	--	--	--	P	P	P	--	--	--	--	--
Non-Native Grassland	--	X	X	--	--	--	--	--	--	X	X	X	--	X	--	--	--
Ruderal	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Developed	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Southern Willow Scrub	--	P	--	--	--	--	--	--	--	P	P	P	--	--	--	--	--
Mule Fat Scrub	--	P	--	--	--	--	--	--	--	P	P	P	--	--	--	--	--

Key: **X =** Observed during field reconnaissance
P = Potentially observed as interpolated from off-site analysis and aerial photographs
-- = Not Observed

Riversidean Alluvial Sage Scrub

Riversidean alluvial sage scrub is a vegetation type primarily restricted to floodplain areas. This vegetation type is typically dominated by scalebroom (*Lepidospartum squamatum*), though common subdominant shrub species include California sagebrush (*Artemisia californica*), Mexican elderberry (*Sambucus mexicana*) and various coastal sage scrub and chaparral species. The open understory areas are typically dominated by herbaceous species (native and non-native) usually associated with grassland communities. Scattered riparian trees and shrubs often found in association with this vegetation type include sycamore (*Platanus racemosa*) and mule fat (*Baccharis salicifolia*). Conditions that would appear to support the development of this high value vegetation type as interpolated from aerial photographs are present at Vulcan Gravel, Sheldon Pit and Tujunga Wash Diversion, Cal Mat Pit, and Strathern Pit.

Coastal Sage Scrub

Coastal sage scrub is a low to moderate shrub vegetation type that occurs at low elevations on the western slopes and plains of the coast ranges. The coastal sage scrub vegetation type observed consists of a mix of buckwheat (*Eriogunum fasciculatum*), California sagebrush, and Our Lord's candle (*Yucca whipplei*). Coastal sage scrub, which provide moderate to high habitat value, was observed in the vacant lot on Wentworth and conditions that would appear to support the development of this habitat as interpolated from aerial photographs are present at Vulcan Gravel, Sheldon Pit and Tujunga Wash Diversion, Cal Mat Pit, and Strathern Pit.

Non-Native Grassland

Non-native grassland consists primarily of annual grasses that are predominately Mediterranean in origin. Common grasses within this vegetation type include bromes (*Bromus* ssp.), oats (*Avena* ssp.), fescues (*Festuca* ssp.), and barleys (*Hordeum* ssp.). Many species of native forbs and bulbs, as well as naturalized annual forbs, may be found in annual grasslands but floristic richness is affected to a high degree by land use activity, such as intensity and duration of development and other disturbances. Common forbs encountered within non-native grasslands include filaree (*Erodium* spp.), mustard (*Brassica* spp.), peppergrasses (*Lepidium* spp.), and doveweed (*Eremocarpus setigerus*). Scattered elements of non-native grassland, which provide low to moderate habitat value, were observed or interpolated within portions of Vulcan Gravel, Tuxford Green, Sheldon Pit and Tujunga Wash Diversion, Cal Mat Pit, Strathern Pit, and the power line easement.

Ruderal and Developed

Ruderal areas consist of early successional grassland with pioneering herbaceous plants that readily colonize disturbed ground and openings in hardscape development. Species frequently occurring within this vegetation type include Russian thistle (*Salsola tragus*), doveweed, tumbleweed (*Amaranthus albus*), and many of the forbs that also occur in non-native grassland. Ruderal vegetation occur throughout the project area at any site that has been disturbed by either natural or human causes.

The developed vegetation type consists of structures, paved areas, and utility, public works, and roadway right-of-ways. Developed areas are typically devoid of native plants. Ornamental vegetation that may be present in the developed areas typically consist of introduced trees, shrubs, flowers, and turf grass. Developed areas, which provide low habitat value, were observed at all individual project component sites.

Southern Willow Scrub

Southern willow scrub is characterized by willows (*Salix* sp.) with lower concentrations of mule fat. Although this habitat was not directly observed during field reconnaissance, conditions that would appear to support the development of this high value habitat as interpolated from aerial photographs are present at Vulcan Gravel, Sheldon Pit and Tujunga Wash Diversion, Cal Mat Pit, and Strathern Pit.

Mule Fat Scrub

Mule fat scrub consists of dense stands of mule fat with lower concentrations of willow. This vegetation type was interpolated from aerial photographs as occurring in the various pit sites. Similar to southern willow scrub, this vegetation type was not directly observed during field reconnaissance; however, conditions that would appear to support the development of this high value habitat as interpolated from aerial photographs were present at Vulcan Gravel, Sheldon Pit and Tujunga Wash Diversion, Cal Mat Pit, and Strathern Pit.

3.2 Common Wildlife

The following discussion identifies wildlife species expected to occur within the project area at individual project component sites in their existing condition. Potential for presence is based on known occurrences of these species in the project area or the presence of suitable habitat to support them.

Fish

Freshwater fish were not observed during field reconnaissance; however, there is some potential for one fish species to occur within surface waters associated with the gravel pits. Mosquito fish (*Gambusia affinis*) is a non-native fish species that is known to occur in the project area. Mosquito fish may be present at Vulcan Gravel, Sheldon Pit and Tujunga Wash Diversion, Cal Mat Pit, and Strathern Pit.

Amphibians

Though no amphibians were observed during the field reconnaissance, habitat observed or potentially present from interpolation of other habitat data within the Vulcan Gravel, Sheldon Pit and Tujunga Wash Diversion, Cal Mat Pit and Strathern Pit sites has the potential to support these species. Common native amphibian species expected to occur in the project area at these sites include the western toad (*Bufo boreas*), Pacific treefrog (*Hyla regilla*), and California treefrog (*Hyla cadaverina*). Non-native amphibian species expected to occur in the project area and potentially present at these sites include the bullfrog (*Rana catesbeiana*).

Reptiles

Reptile species observed or expected to occur within the project area include the side blotched lizard (*Uta stansburiana*), western fence lizard (*Sceloporus occidentalis*), southern alligator lizard (*Elgaria multicarinatus*), coastal western whiptail (*Cnemidophorus tigris tigris*), coachwhip (*Masticophis flagellum*), south coast garter snake (*Thamnophis sirtalis* spp.), common kingsnake (*Lampropeltis getulus*), and Southern Pacific rattlesnake (*Crotalus viridis heleri*). Habitat observed or interpolated to have potential to support these species occurs on the vacant lot on Wentworth, Vulcan Gravel, Sheldon Pit and Tujunga Wash Diversion, Cal Mat Pit, and Strathern Pit. The lizard species (only) have the potential to occur at Tuxford Green, Sun Valley

Middle School, Stonehurst Park, Stonehurst Elementary School, and Roscoe Elementary School.

Birds

Resident bird species expected to occur in the project area include the turkey vulture (*Cathartes aura*), mallard (*Anas platyrhynchos*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), killdeer (*Charadrius vociferous*), barn owl (*Tyto alba*), Anna's hummingbird (*Calypte anna*), black phoebe (*Sayornis nigricans*), western scrub-jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), bushtit (*Psaltriparus minimus*), house wren (*Troglodyes aedon*), northern mockingbird (*Mimus polyglottos*), Brewer's blackbird (*Euphagus cyanocephalus*), brown-headed cowbird (*Molothrus ater*), and house finch (*Carpodacus mexicanus*). Habitat observed or interpolated to have potential to provide nesting, foraging or roosting habitat for these species occurs on the vacant lot on Wentworth, Vulcan Gravel, Sheldon Pit and Tujunga Wash Diversion, Cal Mat Pit, Strathern Pit, Tuxford Green, Sun Valley Middle School, Stonehurst Park, Stonehurst Elementary School, and Roscoe Elementary School..

Mammals

Common small mammal species observed or expected to occur in the project area include the desert cottontail (*Sylvilagus audubonii*), California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), California vole (*Microtus californicus*), house mouse (*Mus musculus*), California mouse (*Peromyscus californicus*), deer mouse (*Peromyscus maniculatus*), and black rat (*Rattus rattus*). Habitat observed or interpolated to have potential to provide habitat for these species occurs on the vacant lot on Wentworth, Vulcan Gravel, Sheldon Pit and Tujunga Wash Diversion, Cal Mat Pit, and Strathern Pit. The potential for suitable habitat for these species is lower at Tuxford Green, Sun Valley Middle School, Stonehurst Park, Stonehurst Elementary School, and Roscoe Elementary School.

Common bat species expected to occur in the project area include the big brown bat (*Eptesicus fuscus*), hoary bat (*Lasiurus cinereus*), California myotis (*Myotis californicus*), western pipistrelle (*Pipistrellus hesperus*), and Brazilian free-tailed bat (*Tadarida brasiliensis*). The surface water at Vulcan Gravel, Sheldon Pit and Tujunga Wash Diversion, CalMat Pit, and Strathern Pit have the potential to support insects that would provide forage for the various bat species.

Larger mammal species expected to occur in the watershed include the Virginia opossum (*Didalphis virginiana*), coyote (*Canis latrans*), common raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*). Habitat observed or interpolated to have potential to provide habitat for these species occurs on the vacant lot on Wentworth, Vulcan Gravel, Sheldon Pit and Tujunga Wash Diversion, Cal Mat Pit, and Strathern Pit, though the potential is lower at Tuxford Green, Sun Valley Middle School, Stonehurst Park, Stonehurst Elementary School, and Roscoe Elementary School.

3.3 Wildlife Movement

Wildlife corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated "islands" of wildlife habitat. In the absence of habitat linkages that allow movement to adjoining open space areas, various studies have concluded that some wildlife species, especially the larger and more mobile mammals, will not likely persist over time in fragmented or isolated habitat areas because they prohibit the infusion of new individuals and genetic information (MacArthur and Wilson 1967; Soule 1987; Harris and Gallagher 1989; Bennett 1990).

Corridors mitigate the effects of this fragmentation by: (1) allowing animals to move between remaining vegetation types, thereby permitting depleted populations to be replenished and promotes genetic exchange; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events (such as fire or disease) will result in population or local species extinction; and (3) serving as travel routes for individual animals as they move in their home ranges in search of food, water, mates, and other needs (Noss 1983; Farhig and Merriam 1985; Simberloff and Cox 1987; Harris and Gallagher 1989).

Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (e.g., juvenile animals from natal areas, or individuals extending range distributions); (2) seasonal migration; and (3) movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover). A number of terms have been used in various wildlife movement studies, such as "wildlife corridor", "travel route", "habitat linkage", and "wildlife crossing" to refer to areas in which wildlife move from one area to another. To clarify the meaning of these terms and facilitate the discussion on wildlife movement in this analysis, these terms are defined as follows:

Travel Route–a landscape feature (such as a ridgeline, drainage, 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, cover, den sites). The travel route is generally preferred because it provides the least amount of topographic resistance in moving from one area to another. It contains adequate food, water, and/or cover while moving between habitat areas and provides a relatively direct link between target habitat areas.

Wildlife Corridor–a piece of habitat, usually linear in nature, that connects two or more habitat patches that would otherwise be fragmented or isolated from one another. Wildlife corridors are usually bound by urban land areas or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and facilitate movement while in the corridor. Larger, landscape-level corridors (often referred to as "habitat or landscape linkages") can provide both transitory and resident habitat for a variety of species.

Wildlife Crossing–a small, narrow area, relatively short in length and generally constricted in nature, that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement. Crossings typically are manmade and include culverts, underpasses, drainage pipes, and tunnels to provide access across or under roads, highways, pipelines, or other physical obstacles. These often represent "choke points" along a movement corridor.

It is important to note that, in a large open space area in which there are few or no man-made or naturally occurring physical constraints to wildlife movement, wildlife corridors as defined above may not yet exist. Given an open space area that is both large enough to maintain viable populations of species and provide a variety of travel routes (canyons, ridgelines, trails, riverbeds, and others), wildlife will use these "local" routes while searching for food, water, shelter, and mates, and will not need to cross into other large open space areas. Based on their size, location, vegetative composition, and availability of food, some of these movement areas (e.g., large drainages and canyons) are used for longer lengths of time and serve as source areas for food, water, and cover, particularly for small- and medium-sized animals. This is especially true if the travel route is within a larger open space area. However, once open space areas become constrained and/or fragmented as a result of urban development or construction of physical obstacles such as roads and highways, the remaining landscape features or travel routes that connect the larger open space areas can "become" corridors as long as they provide adequate space, cover, food, and water, and do not contain obstacles or distractions (e.g., man-made noise, lighting) that would generally hinder wildlife movement.

In general, the project area has been nearly completely urbanized and/or developed for decades; therefore, virtually all of the viable wildlife movement that historically occurred through the area has been constrained by existing land uses and development. While land uses such as residential and commercial/retail have virtually eliminated the potential for wildlife movement to occur, land uses such as commercial/recreational (e.g., golf courses and parks) and industrial (e.g., gravel pits and utility/public works easements) may contain conditions or vegetation types with the potential support wildlife movement in the project area. Any such conditions could become more viable with enhancement or restoration of the habitat. Portions of Tujunga Wash and the LADWP powerline easement have the potential to provide wildlife travel routes or corridors into or through the project area to higher value habitat areas in the region.

3.4 Regulatory Framework — Sensitive Species and Habitats

Biological resources within the project area are governed by several regulatory agencies and applicable statutes and guidelines for which they are responsible, including, but not limited to: the USFWS and the Federal Endangered Species Act (ESA); the CDFG and the California Endangered Species Act (CESA) and Fish and Game Code Section 1601; Regional Water Quality Control Board (RWQCB); and the U.S. Army Corps of Engineers (ACOE) and Section 401 and 404 of the Federal Clean Water Act. These agencies can provide input into the CEQA process regarding compliance with the FESA and CESA. The applicable agencies, regulations, and terminology associated with biological resource protection and management are described below.

Federal Status

A federal Endangered species is a species facing extinction throughout all or a significant portion of its geographic range. A federal Threatened species is a species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range. The presence of any federal Threatened or Endangered species on an area proposed for development may lead to a CEQA finding of "significance" and requires consultation with the USFWS, particularly if development would result in "take" of the species or its habitat.

Section 7 applies to federal agency actions (permits/funding, etc.) for private activities, such as Section 404 permits issued by the ACOE for construction work in waters or wetlands. Specifically, Section 7 imposes an affirmative duty on federal agencies to ensure that their actions (including permitting) are not likely to jeopardize the continued existence of a listed species (plant or animal) or result in the destruction or modification of critical habitat (50 C.F.R. § 402.01[a]). Both Sections 7 and 9 of the federal ESA allow or authorize "incidental" takes in accordance with the provisions of the federal ESA as described below, but only with a permit which may be obtained through consultation with the USFWS.

Proposed Threatened and proposed Endangered species are those officially proposed by the USFWS for addition to the federal Threatened and Endangered species list. Because proposed species may become listed as Threatened or Endangered prior to or during implementation of a proposed development project, they are treated here as though they are listed species.

Federal Species of Concern is an informal designation by the USFWS for those species that the USFWS has determined might be declining or are in need of concentrated conservation actions to prevent decline.

Federal Endangered Species Act

The FESA of 1973 protects plants and animals that are listed by the federal government as "Endangered" or "Threatened." The FESA is implemented by enforcement of Sections 7 and 9 of the Act. A federally-listed species is protected from unauthorized "take" pursuant to Section 9 of the FESA. "Take," as defined by the FESA, means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or to attempt to engage in any such conduct. All "persons" are presently prohibited from taking a federally-listed species unless and until: 1) the appropriate Section 10a permit has been issued by the USFWS; or 2) an incidental take statement is obtained as a result of formal consultation between a federal agency and the USFWS pursuant to Section 7 of the FESA and implementing regulations pertaining thereto (50 CFR 402). "Person" is defined in the FESA as an individual, corporation, partnership, trust, association, or any private entity; or any officer, employee, agent, department or instrumental of the federal government, or any state, municipality or political subdivision of the state, or any other entity subject to the jurisdiction of the United States.

"Take" may be permitted pursuant to Section 10a of the FESA if a Habitat Conservation Plan (HCP), which is prepared pursuant to regulations at 50 CFR 17.22(b) (2) and 50 CFR 17.32 (b) (2), is approved by the USFWS. These regulations require, in part, that the "take" can be permitted only when the taking is incidental to, but not the purpose of, an otherwise lawful activity and that the permit applicant shall, to the maximum extent practicable, minimize and mitigate the impacts of such taking.

Clean Water Act – Section 404

Section 404 of the Clean Water Act (CWA) regulates the placement of dredged and fill material into waters of the United States, including wetlands. The CWA authorizes the issuance of permits for such discharges as long as the proposed activity complies with environmental requirements specified in Section 404(b)(1) of the CWA. Section 404 is the primary federal program regulating activities in wetlands. The Section 404 program is administered by both the ACOE and the U.S. Environmental Protection Agency (USEPA), while the USFWS, National Marine Fisheries Service (NMFS), and several state agencies play important advisory roles.

The ACOE has primary responsibility for the permit program and is authorized, after notice and opportunity for a public hearing, to issue Section 404 permits. In evaluating individual Section 404 permit applications, the ACOE determines compliance with Section 404(b)(1) guidelines and carries out a public-interest review. This review involves balancing such public-interest factors as conservation, economics, aesthetics, wetlands protection, cultural values, navigation, fish and wildlife values, water supply, and water quality. The ACOE also considers comments received from the USEPA, USFWS, NMFS, and state resource agencies. The ACOE is obligated to permit the "least environmentally damaging practicable alternative", provided one exists. Also, the ACOE may not issue a permit before the local Regional Water Quality Control Board (RWCQB) has issued a water quality "certification" or "waiver" of compliance with Section 401 of the federal CWA.

Section 404 regulates only the discharge of dredged or fill material into "waters of the United States." Discharges of dredged and fill material are commonly associated with activities such as channel construction and maintenance, fills to create development sites, transportation improvements, and water resource projects (such as dams, jetties, and levees). Excavation activities (e.g. mechanized land clearing, ditching, channelization, runoff from disposal areas and others) also result in at least some discharge of dredged materials, and are thus regulated.

Discharges can be authorized by either individual or general permits under Section 404. If an individual permit is required, an application form describing the proposed activity is submitted to the ACOE. Once a complete application is received, the permitting agency issues a public notice containing the information needed to evaluate the likely impact of the proposed activity. Notice is sent to all interested parties, including appropriate government agencies at the federal, state, and local level, and others as requested. Any person may request that a public hearing be held to consider the application.

The ACOE is authorized to issue general permits on a nationwide, state, or regional basis for categories of activities that have minimal individual and cumulative impacts. General permits are issued for five-year periods. They allow certain activities to occur without individual federal permit approval as long as the discharger complies with standard conditions issued by the ACOE. General permits allow certain activities to occur with little, if any, delay or paperwork. Once issued, a general permit may be modified or revoked if the permitted activities are found to have had adverse environmental impacts. On a case-by-case basis, the permitting agency may invoke discretionary authority and require a discharger that would otherwise be covered by a general permit to apply for an individual permit.

The most significant general permits are called Nationwide Permits (NWPs), because they apply throughout the country. Forty NWPs exist. Some activities included under NWPs include minor discharges and dredging, wetland and riparian restoration and creation activities, and temporary construction.

State Status

The State of California defines an Endangered species as a species whose prospects of survival and reproduction are in immediate jeopardy. A Threatened species is a species in such small numbers throughout its range that it is likely to become an Endangered species in the near future in the absence of special protection or management. A Rare species is one present in such small numbers throughout its range that it may become Endangered if its present environment worsens. Rare status applies to California native plants listed prior to the CESA. State Threatened and Endangered species are protected against take unless an incidental take permit is obtained from the CDFG.

California Species of Special Concern is an informal designation used by the CDFG for some declining wildlife species that are not state candidates. This designation does not provide legal protection, but signifies that these species are recognized as special status by the CDFG.

Species that are California Fully Protected may not be taken or possessed at any time.

California Endangered Species Act

The CESA (Fish and Game Code Sections 2050 to 2097) is administered by the CDFG and prohibits the take of plant and animal species designated by the Fish and Game Commission as either Threatened or Endangered in the state of California. "Take" in the context of the CESA means to hunt, pursue, kill, or capture a listed species, as well as any other actions that may result in adverse impacts when attempting to take individuals of a listed species.

CESA allows for take that is incidental to otherwise lawful development projects. CESA emphasizes early consultation to avoid potential impacts on rare, Endangered, and Threatened species and to develop appropriate mitigation planning to offset project induced losses of listed species populations and their essential habitats.

Through permits or memorandums of understanding, the CDFG may authorize individuals, public agencies, or educational institutions, to import, export, take, or possess any Endangered species, Threatened species, or candidate species of plants and animals. Take is authorized only after it has been demonstrated by the applicant that the impacts of a project shall be minimized and fully mitigated. The measures required to meet this obligation are roughly proportional in extent to the impact of the authorized taking on the species and must be capable of successful implementation.

California Fish and Game Code Section 1601

The CDFG has jurisdictional authority over riparian resources associated with rivers, streams, and lakes under California Fish and Game Code Sections 1600-1607. Activities of state and local agencies and public utilities that are project proponents are regulated by the CDFG under Section 1601 of the code and regulates work that will: substantially divert, obstruct, or change the natural flow of a river, stream, or lake; substantially change the bed, channel, or bank of a river, stream, or lake; or use material from a streambed. CDFG enters into a Streambed Alteration Permit with a project proponent and can impose conditions on the agreement to ensure no net loss of riparian values or acreage.

Due to the fact that the CDFG includes under its jurisdiction streamside habitats that under the federal definition may not qualify as jurisdictional waters and/or wetlands of the U.S. on a particular project site, CDFG jurisdiction may be broader than that of the ACOE. As an example, riparian forests in California often lie outside the plain of ordinary high water regulated under Section 404 of the CWA, and often do not have all three parameters (wetland hydrology, hydrophytic vegetation, and hydric soils) sufficiently present to be regulated as a wetland. However, riparian forests are frequently within CDFG regulatory jurisdiction under Section 1601.

Other Statutes Restricting Actions Against Natural Resources

Special status habitats are vegetation types, associations, or subassociations that support concentrations of special status plant or wildlife species, are of relatively limited distribution, or are of particular value to wildlife. Although special status habitats are not afforded legal protection unless they support protected species, potential impacts on habitat may increase concerns for impacts to species, as well as mitigation suggestions by resources agencies.

The CNPS is a private organization that has developed an inventory of California's special status plant species (CNPS 2001). This inventory summarizes the distribution, rarity, and endangerment of California's vascular plants. This rare plant inventory is comprised of four lists. CNPS presumes that List 1A plant species are extinct in California because they have not been seen in the wild for many years. CNPS considers List 1B plants as Rare, Threatened, or Endangered throughout their range. List 2 plant species are considered Rare, Threatened, or Endangered in California but more common elsewhere. Plant species for which CNPS needs additional information are included on List 3. List 4 plant species are those of limited distribution in California, but whose susceptibility to threat appears low at this time.

In addition to providing an inventory of special status plant and animal species, the CNDDB also provides an inventory of vegetation types that are considered special status by the state and federal resource agencies, academic institutions, and various conservation groups.

A species that is considered a Special Animal is a species that is tracked by the CNDDB. Species of Local Concern are those that have no official status with the resource agencies, but are being watched by local conservation organizations because either there is a unique population in the region or the species is declining in the region.

3.5 Sensitive Species in the Project Area

Special Status Plant Species

Fifteen (15) special status plant species have been previously identified in the project region, or have some potential to occur within the project area. Brief descriptions of these species are discussed below and summarized in Table 2, alphabetically, according to their scientific name. None of these species were directly observed during field reconnaissance.

TABLE 2
SPECIAL STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR WITHIN SUN VALLEY WATERSHED PLAN INDIVIDUAL PROJECT COMPONENT SITES

Species	Status		Sites with Potential Occurrence
	Federal/ State	CNPS	
Greata' aster *Aster greatea*	--/--	1B	Species is not expected to occur at any site due to lack of habitat and/or substrate
Braunton's milk vetch *Astragalus brauntonii*	FE/CE	1B	Species is not expected to occur at any site due to lack of habitat and/or substrate
Parish's brittlescale *Atriplex parishii*	--/--	1B	Species is not expected to occur at any site due to lack of habitat and/or substrate
Nevin's barberry *Berberis nevinii*	FE/CE	1B	Species has a low potential to occur at Vulcan Gravel Pit, vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit and is not expected to occur at the remaining sites due to lack of habitat and/or substrate
Plummer's mariposa lily *Calochortus plummerae*	--/--	1B	Species has a low potential to occur at Vulcan Gravel Pit, vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit and is not expected to occur at the remaining sites due to lack of habitat and/or substrate
Lewis's evening primrose *Camissonia lewisii*	--/--	3	Species has a low potential to occur at Vulcan Gravel Pit, vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit and is not expected to occur at the remaining sites due to lack of habitat and/or substrate
Southern tarplant *Centromadia parryi* ssp. *australis*	--/--	1B	Species has a limited potential to occur at Vulcan Gravel Pit, vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit and is not expected to occur at the remaining sites due to lack of habitat and/or substrate
San Fernando Valley spineflower *Chorizanthe parryi* var. *fernandina*	FC/CE	1B	Species has a limited potential to occur at Vulcan Gravel Pit, vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit and is not expected to occur at the remaining sites due to lack of habitat and/or substrate
Slender-horned spineflower *Dodecahema leptocerus*	FE/CE	1B	Species has a limited potential to occur at Vulcan Gravel Pit, vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit and is not expected to occur at the remaining sites due to lack of habitat and/or substrate
Many-stemmed dudleya *Dudleya multicaulis*	--/--	1B	Species is not expected to occur at any site due to lack of habitat and/or substrate

TABLE 2 (continued)
SPECIAL STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR WITHIN SUN VALLEY WATERSHED PLAN INDIVIDUAL PROJECT COMPONENT SITES

Species	Status		Sites with Potential Occurrence
	Federal/ State	CNPS	
Los Angeles sunflower *Helianthus nuttallii* ssp. *parishii*	--/SC	1B	Species has a limited potential to occur at Vulcan Gravel Pit, Sheldon Pit, Cal Mat Pit, and Strathern Pit and is not expected to occur at the remaining sites due to lack of habitat and/or substrate
Mesa horkelia *Horkelia cuneata* ssp. *puberula*	--/--	1B	Species has a low potential to occur at Vulcan Gravel Pit, vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit and is not expected to occur at the remaining sites due to lack of habitat and/or substrate
San Gabriel linanthus *Linanthus concinnus*	--/--	1B	Not expected to occur at any site due to lack of habitat and/or substrate
Davidson's bush mallow *Malacothamnus davidsonii*	--/--	1B	Species has a low potential to occur at Vulcan Gravel Pit, vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit and is not expected to occur at the remaining sites due to lack of habitat and/or substrate
California orcutt grass *Ocuttia californica*	FE/CE	1B	Not expected to occur at any site due to lack of habitat and/or substrate

LEGEND

Federal (USFWS)		**State (CDFG)**	
FE	Endangered	CE	Endangered
FT	Threatened	CT	Threatened
PE	Proposed Endangered	PE	Proposed Endangered
PT	Proposed Threatened	PT	Proposed Threatened
SOC	Species of Concern[1]	SSC	Species of Special Concern[1]
FC	Federal Candidate	SC	State Candidate

California Native Plant Society (CNPS)

1A Plants Presume Extinct in California
1B Plants Rare, Threatened, or Endangered in California and Elsewhere
2 Plants Rare, Threatened, or Endangered in California but More Common Elsewhere
3 Plants About Which We Need More Information – A Review List
4 Plants of Limited Distribution – A Watch List

[1]Note – This designation, although not an active term, has been reinstated for informational purposes only.

Greata's Aster (*Aster greatae*)

Greata's aster, a CNPS 1B plant, is a perennial species known from the southern slopes of the San Gabriel Mountains. One of the two known occurrences is located in Gold Canyon within the Angeles National Forest. The species is found in damp places within foothill and lower montane conifer habitats. This species is not expected to occur on any of the individual project component sites due to lack of appropriate supporting habitat.

Braunton's Milk-vetch (*Astragalus brauntonii*)

Braunton's Milk-vetch is a federal and state-listed Endangered, and a CNPS 1B, plant species endemic to foothill habitats in the Santa Ana, San Gabriel, and Santa Monica mountains. The species is found on small limestone outcrops in gaps or disturbed places within chaparral, coastal sage scrub, and closed-cone conifer forest. This species is known from the Simi and Chino hills, Santa Ynez Canyon (Santa Monica Mountains), and Coal and Gypsum canyons (Santa Ana Mountains), with other occurrences documented in the San Gabriel Mountains on private lands adjacent to the Angeles National Forest. This species is short-lived (two to three years) and appears to require significant surface disturbance for reproduction; consequently, this species may appear only once in twenty to fifty or more years, depending on the interval between significant disturbances. This species is not expected to occur on any of the individual project component sites due to lack of appropriate substrate.

Parish's Brittlescale *(Atriplex parishii)*

Parish's Brittlescale is a CNPS 1B species that is typically found on drying soils in alkali meadows, vernal pools, playas, and in chenopod scrub at low elevations within desert habitats (though some locations are reported up to 4,700 feet). The CNDDB contains records for eleven occurrences. Most of the recent collections are from the San Jacinto Valley in Riverside County, though historic occurrences exist for Los Angeles, San Bernardino, and Orange Counties. This species is not expected to occur on any of the individual project component sites due to lack of appropriate habitat and substrate.

Nevin's Barberry (*Berberis nevinii*)

Nevin's Barberry is a federal and state-listed Endangered and CNPS 1B species known from Riverside, San Bernardino, and Los Angeles counties. Its current range extends from the foothills of the San Gabriel Mountains to near the foothills of the Santa Ana Mountains. Plants have been observed in discrete, localized occurrences in two types of habitat: sandy and gravelly places along the margins of dry washes, and on coarse soils in chaparral. This species is known historically from fewer than thirty scattered occurrences, with several known to have been extirpated as a result of urban development. This species appears to be restricted to chaparral or coastal sage scrub communities in areas with alluvial or sedimentary-based substrates. This species has a low potential to occur at Vulcan Gravel Pit, the vacant lot on Wentworth, Sheldon Pit, CalMat Pit, and Strathern Pit; however, it is not expected to occur at the remaining individual project component sites due to lack of habitat and/or substrate.

Plummer's Mariposa Lily (*Calochortus plummerae*)

Plummer's Mariposa Lily is a CNPS 1B plant found in the San Gabriel, San Bernardino, San Jacinto, Santa Ana, and Santa Monica mountains. The CNDDB lists fifty-eight occurrences, many of which are located on private lands planned for development. This species is found in chaparral habitat as well as alluvial fan sage scrub, grasslands, and lower montane conifer forests below 5,500 feet. The species is vulnerable to development projects, trail construction and maintenance, fire suppression, habitat conversion, grazing, trampling, and sand and gravel mining. This species has a low potential to occur at Vulcan Gravel Pit, the vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit and is not expected to occur at the remaining individual project component sites due to lack of habitat and/or substrate.

Lewis's Evening Primrose *(Camissonia lewisii)*

The Lewis's evening primrose is a CNPS 3 plant. This annual species grows in very sandy substrates near the beach, typically on beach bluffs in San Diego, Orange, Los Angeles counties, and Baja California, Mexico. The small stature of the plant, thick quadrangular seed capsule, and sandy microhabitat near the beach are typical of this species. This species could be extremely rare or approaching extirpation in the U.S. This species has a low potential to occur at Vulcan Gravel Pit, the vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit and is not expected to occur at the remaining individual project component sites due to lack of habitat and/or substrate.

Southern Tarplant (*Centromadia parryi* ssp. *australis*)

Southern tarplant is a CNPS 1B plant that occurs within San Diego, Orange, Ventura, Los Angeles, and Santa Barbara counties. This species prefers the margins of marshes, swamps, seasonal wetlands (such as vernal pools), and valley and foothill grasslands. This species has a limited potential to occur at the vacant lot on Wentworth, Vulcan Gravel Pit, Sheldon Pit, Cal Mat Pit, and Strathern Pit and it is not expected to occur at the remaining individual project component sites due to lack of habitat and/or substrate.

San Fernando Valley Spineflower *(Chorizanthe parryi* var*. fernandina)*

The San Fernando Valley spineflower is a federal candidate, state Endangered, and CNPS List 1B plant species. This species is a small, decumbent plant with white flowers. It is distinguished from the Parry's spineflower in having straight, rather than hooked, involucural teeth. Historically it was thought that the habitat for this species was in sandy washes. However, a locality discovered in 1999 found the species in non-native grassland and grassland-coastal sage scrub ecotonal habitats. These plants were found on mineral soils with reduced annual cover and well developed crytogamic crusts. This species was historically known from valleys of Los Angeles and Orange Counties, including the following locations: a sandy wash in Castaic, Elizabeth Lake, the mouth of Little Tujunga Wash, the Chatsworth area, Santa Ana, Ballona Creek, and the area near the lower San Fernando Dam. This species was thought to be extinct, until the discovery in 1999 of a population on Laskey Mesa in the Simi Hills. This species was also verified in the Newhall area in 1999. This species has a limited potential to occur at the vacant lot on Wentworth, Vulcan Gravel Pit, Sheldon Pit, Cal Mat Pit, and Strathern Pit and it is not expected to occur at the remaining individual project component sites due to lack of habitat and/or substrate.

Slender-horned Spineflower *(Dodecahema leptoceras)*

Slender-horned spineflower is a federal and state-listed Endangered and CNPS 1B species found along sandy stream terraces. This species prefers alluvial fan scrub habitat, which has been declining in Los Angeles, San Bernardino, and Riverside counties as a result of urban and agricultural development, sand and gravel mining, and flood control measures. Plants are typically found in areas with no exotic species or obvious ground disturbance. This species has a limited potential to occur at the vacant lot on Wentworth, Vulcan Gravel Pit, Sheldon Pit, Cal Mat Pit, and Strathern Pit; however, it is not expected to occur at the remaining individual project component sites due to lack of habitat and/or substrate.

Many-stemmed Dudleya (*Dudleya multicaulis*)

Many-stemmed dudleya is a CNPS 1B species distributed in coastal and foothill areas of Los Angeles, Orange, western Riverside, and San Diego counties. This species typically prefers clay soils in chaparral, coastal sage scrub, and grassland habitats. The species forms vegetative parts and inflorescences above ground each year and then dies back in late spring leaving just the underground corm. This species is not expected to occur on any of the individual project component sites due to lack of habitat and/or substrate.

Los Angeles Sunflower (*Helianthus nuttallii* ssp. *parishii*)

The Los Angeles sunflower is a state candidate and a CNPS 1B plant. Until the summer of 2002 when it was rediscovered in the Newhall area of Los Angeles County, this species had been considered extinct because it had not been observed since 1937. Los Angeles sunflower is a wetland indicator species that typically prefers marshes and swamps (coastal salt and freshwater), though potential habitat may include the margins of linear drainages that mimic marsh habitat as well. This sunflower is a perennial plant that is expected to bloom between August and October. This species has a limited potential to occur at Vulcan Gravel Pit, Sheldon Pit, Cal Mat Pit, and Strathern Pit and it is not expected to occur at the remaining individual project component sites due to lack of habitat and/or substrate.

Mesa Horkelia (*Horkelia cuneata* ssp. *puberula*)

Mesa horkelia is a CNPS List 1B plant endemic to southern California, though many historical occurrences have been extirpated. This species is a perennial herb that prefers sandy or gravelly substrates in chaparral, cismontane woodland, and coastal sage scrub habitat. This species has a low potential to occur at Vulcan Gravel Pit, the vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit and it is not expected to occur at the remaining individual project component sites due to lack of habitat and/or substrate.

San Gabriel Linanthus (*Linanthus concinnus*)

San Gabriel linanthus is a CNPS 1B plant species. This is an annual species typically observed on dry, rocky soils in montane coniferous forests. This species is not expected to occur on any of the individual project component sites due to lack of appropriate habitat and substrate.

Davidson's Bushmallow (*Malacothamnus davidsonii*)

Davidson's bushmallow is a CNPS 1B shrub species known to occur at low elevations in Los Angeles County. Occurrences of this species are known from the San Fernando Valley and western end of the San Gabriel Mountains. In the mountains, this species has been recorded in Little Tujunga Canyon, Lopez Canyon, upper Haines Canyon, Loop Canyon, Big Tujunga Wash, and Pacoima Canyon. The species is typically found in sandy washes and in openings of coastal sage scrub or chaparral. This species has a low potential to occur at Vulcan Gravel Pit, the vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit and it is not expected to occur at the remaining individual project component sites due to lack of habitat and/or substrate.

California Orcutt Grass (*Orcuttia californica*)

California Orcutt grass is a federal and state Endangered and a CNPS List 1B species. California Orcutt grass tends to grow in wetter portions of the vernal pool basins, but this annual does not show much growth until the basins become somewhat desiccated. This species is not expected to occur on any of the individual project component sites due to lack of appropriate habitat and substrate.

Special Status Wildlife Species

Thirteen special status wildlife species have been recorded as having occurred within the Sun Valley Watershed Plan area, none of which were observed during field reconnaissance. A brief description of these special status wildlife species and their potential to occur on the individual project sites is provided below and summarized in Table 3.

TABLE 3
SPECIAL STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR ON INDIVIDUAL PROJECT COMPONENT SITES

Species	Status		Sites with Potential Occurrence
	Federal	**State**	
Fish			
Santa Ana speckled dace *Rhinichithys osulus ssp 3*	None	SSC	Not expected to occur at any site due to lack of potentially supporting habitat
Santa Ana sucker *Catostomuis santaanae*	FT	SSC	Not expected to occur at any site due to lack of potentially supporting habitat
Amphibians			
Arroyo toad *Bufo californicaus*	FE	SSC	Not expected to occur at any site due to lack of potentially supporting habitat
Western spadefoot toad *Scaphiopus hammondi*	SOC	SSC	Not expected to occur at any site due to lack of potentially supporting habitat
Mountain yellow-legged frog *Rana muscosa*	FE (Southern California populations only)	SSC	Not expected to occur at any site due to lack of potentially supporting habitat
Reptiles			
Silvery legless lizard *Anniella pulchra pulchra*	SOC	SSC	Species has a limited potential to occur at Vulcan Gravel Pit, Vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit and is not expected to occur at the remaining sites due to lack of potentially supporting habitat
Orange-throated whiptail *Cnemidophorus hyperythrus beldingi*	None	SSC	Species has a low potential to occur at Vulcan Gravel Pit, Vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit and is not expected to occur at the remaining sites due to lack of potentially supporting habitat
San Diego coast horned lizard *Phrynosoma coronatum blainvillei*	SOC	SSC	Species has a low potential to occur at Vulcan Gravel Pit, Vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit and is not expected to occur at the remaining sites due to lack of potentially supporting habitat
Western pond turtle *Clemmys marmorata*	SOC	SSC	Species has a limited potential to occur at Vulcan Gravel Pit, Sheldon Pit, Cal Mat Pit, and Strathern Pit and is not expected to occur at the remaining sites due to lack of potentially supporting habitat

TABLE 3 (continued)
SPECIAL STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR ON INDIVIDUAL PROJECT COMPONENT SITES

Birds			
Yellow-billed cuckoo *Coccyzus americanus occidentalis*	None	SE	Not expected to occur at any site due to lack of potentially supporting habitat
Coastal California gnatcatcher *Polioptila californica californica*	FT	SSC	Though elements of coastal sage scrub were observed or interpolated at Vulcan Gravel Pit, vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit, this species is not expected to occur at any of the individual project component sites due to lack of suitable potentially supporting habitat.
Least Bell's vireo *Vireo bellii pusillus*	FE	SE	Species has a low potential to occur at Vulcan Gravel Pit, Sheldon Pit, Cal Mat Pit, and Strathern Pit and is not expected to occur at the remaining sites due to lack of potentially supporting habitat
Mammals			
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	None	SSC	Though elements of potentially supporting habitat were observed or interpolated at Vulcan Gravel Pit, vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit, this species is not expected to occur at any of the individual project component sites due to lack of suitable potentially supporting habitat.

LEGEND

Federal (USFWS)		State (CDFG)	
FE	Endangered	SE	Endangered
FT	Threatened	ST	Threatened
PE	Proposed Endangered	PE	Proposed Endangered
PT	Proposed Threatened	PT	Proposed Threatened
C	Candidate Species	SSC	Species of Special Concern
SOC	Species of Concern[1]	FP	Fully Protected

[1]Note – This designation, although not an active term, has been reinstated for informational purposes only.

Santa Ana Speckled Dace (*Rhinichthys osculus*)

The Santa Ana speckled dace is a California Species of Special Concern. Its historic range includes low elevation streams in the Los Angeles, San Gabriel, and Santa Ana river systems. The largest known remaining population is within the Angeles National Forest on the lower reaches of the east, north, and west forks of the San Gabriel River. Other reported occurrences include Pacoima Creek, Little Tujunga Creek, and Big Tujunga Creek, though these populations may now be extinct. The Santa Ana speckled dace requires permanent flowing streams with shallow cobble and gravel riffles. This species is not expected to occur at any individual project component site due to lack of potentially supporting habitat.

Santa Ana sucker (*Catostomus santaanae*)

The Santa Ana sucker is a federally-listed Threatened species and a California Species of Special Concern. The historic range of this species includes low-elevation streams in the Los

Angeles, San Gabriel, and Santa Ana river systems. Extant native populations appear to be concentrated within the east, north, and west forks of the San Gabriel River (including Cattle Canyon and Bear Creek), and Big Tujunga Creek. Introduced populations of the Santa Ana sucker are present in the Santa Clara River, Sespe Creek, Piru Creek, and San Francisquito Creek. Santa Ana suckers are native to many of the same streams as the speckled dace and have similar habitat requirements. Preferred substrates for this species are coarse gravels and boulders. This species is not expected to occur at any individual project component site due to lack of potentially supporting habitat.

Arroyo Toad (*Bufo californicus*)

The arroyo toad species is a federally-listed Endangered species and California Species of Special Concern. The arroyo toad, a subspecies of the southwestern toad, is restricted to rivers with shallow, gravelly pools adjacent to sandy terraces. This species forages on sandy terraces, where adults may also excavate shallow burrows where they shelter during the day and during the dry season. This species historically occurred from San Luis Obispo to San Diego counties along most major rivers and drainages. This species is not expected to occur at any individual project component site due to lack of potentially supporting habitat.

Western Spadefoot Toad (*Scaphiopus hammondii*)

The western spadefoot is a federal Species of Concern and a California Species of Special Concern. The California range of this toad is the Central Valley and adjacent foothills, and the Coast Ranges from Point Conception, Santa Barbara County south to San Diego County. This is typically a lowland species that is found in washes, river flood plains, alluvial fans, playas, and alkali flats and is not a vernal pool obligate as previously reported. This species may occur at higher elevations in Southern California, and has been documented at elevations above 4,000 feet in the Chihuahua Valley and Boulevard areas of San Diego County (Jeff Galizio, personal observation). It primarily inhabits grasslands, but does occur in other sparsely vegetated habitats. This species breeds in vernal pools and other seemingly ephemeral water bodies or floodplains. This species is not expected to occur at any individual project component site due to lack of potentially supporting habitat.

Mountain Yellow-legged Frog (*Rana muscosa*)

The mountain yellow-legged frog is a California Species of Special Concern and Southern California populations are federally-listed as Endangered. In southern California, these frogs are found in the San Gabriel, San Bernardino, and San Jacinto mountains and at least historically on Palomar Mountain. Mountain yellow-legged frogs inhabit high-elevation streams usually above 4,000 feet. However, in the San Gabriel Mountains, and perhaps other areas where the characteristics of mountain streams (i.e., steep, rocky canyons) extend to lower elevations, these frogs were believed to have occurred historically at elevations down to 2,000 feet. This species is not expected to occur at any individual project component site due to lack of potentially supporting habitat.

Silvery Legless lizard (*Anniella pulchra pulchra*)

The silvery legless lizard is a federal Species of Concern and a California Species of Special Concern. It is a small, secretive lizard that spends most of its life beneath the soil, under stones, logs, debris, or in leaf litter associated with sandy or loose loamy soils under the sparse vegetation of beaches, chaparral, pine-oak woodland, or under sycamores, cottonwoods, or oaks growing on stream terraces. Soil moisture is essential for them and legless lizards die if they are unable to reach a moist substrate. Its reported elevation range extends from sea level to approximately 5,700 feet in the Sierra Nevada foothills, but most historic localities along the central and southern California coast are below 3,500 feet. The silvery legless lizard is a burrowing species. This species has a limited potential to occur at Vulcan Gravel Pit, vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit and it is not expected to occur at the remaining individual project component sites due to lack of potentially supporting habitat.

Orange-throated Whiptail (*Cnemidophorus hyperythrus beldingi*)

The orange-throated whiptail is a California Species of Special Concern that occurs in coastal sage scrub and, to a lesser extent, chaparral, floodplains, and streamside terraces. Its geographic range extends from the southern edge of San Bernardino County south to around Loreto in Baja California, Mexico. This species is usually observed on the western slopes of the coast ranges at an elevation range from near sea level to about 3,400 feet. This species has a low potential to occur at Vulcan Gravel Pit, vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit and it is not expected to occur at the remaining individual project component sites due to lack of potentially supporting habitat.

San Diego Horned Lizard (*Phrynosoma coronatum blainvillei*)

The San Diego horned lizard is a federal Species of Concern and a California Species of Special Concern. This species may be found in a variety of habitats but are most common in communities with loose, fine soils with a high sand component; an abundance of native ants; open areas with limited overstory for basking; and areas with low, dense shrubs for refuge. Three factors have contributed to its decline: loss of habitat, over collecting, and the introduction of exotic ants. In some places, especially adjacent to urban areas, the introduced ants have displaced the native species upon which the lizard feeds. This species has a low potential to occur at Vulcan Gravel Pit, the vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit and it is not expected to occur at the remaining individual project component sites due to lack of potentially supporting habitat.

Western pond turtle (*Clemmys marmorata*)

The Western pond turtle is a federal Species of Concern and a California Species of Special Concern. This species occurs primarily in freshwater rivers, streams, lakes and ponds that also support basking sites such as logs, banks, or other suitable areas above water level. There is one large pond turtle population on the West Fork of the San Gabriel River below Cogswell Reservoir with smaller populations on upper Castaic Creek, Aliso Canyon, Pacoima Creek, Little Tujunga Creek, Big Tujunga Creek, the East Fork of the San Gabriel River, and possibly Big Dalton Creek. The primary reason for pond turtle declines has been loss of suitable habitat from the construction of dams, diversions, and stream channelization that have greatly reduced the availability of persistent, pooled water along low-elevation streams. Other threats to this species include introduced predatory fish, bullfrogs, and illegal collecting. This species has a limited potential to occur at Vulcan Gravel Pit, Sheldon Pit, Cal Mat Pit, and Strathern Pit and it is not expected to occur at the remaining individual project component sites due to lack of potentially supporting habitat.

Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)

The yellow-billed cuckoo is listed as Endangered by the state of California. Formerly a rare summer resident, this species is now extirpated from much of Southern California. Breeding yellow-billed cuckoos are restricted to extensive deciduous riparian thickets or forest with dense, low-level or understory foliage that occurs along slow-moving watercourses, backwaters, or seeps. Willows are almost always a dominant component of western yellow-billed cuckoo nesting habitat. This species is not expected to occur at any individual project component site due to lack of potentially supporting habitat.

Coastal California gnatcatcher (*Polioptila californica californica*)

The coastal California gnatcatcher is a federally-listed Threatened species and California Species of Special Concern. This species is a non-migratory resident of coastal sage scrub habitats of Southern California. This species may occur at elevations up to 3,000 feet on the western side of the coastal mountain ranges, though population densities decline substantially at elevations above about 900 feet and at increasing distances from the coast. This species tends to be most abundant in mature stands of coastal sage scrub, where shrub canopy cover is typically greater than 50 percent. Although elements of coastal sage scrub were observed or interpolated to be –present at Vulcan Gravel Pit, the vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit, this species is not expected to occur at any of the individual project component sites due to lack of suitable potentially supporting habitat.

Least Bell’s Vireo (*Vireo bellii pusillus*)

The least Bell’s vireo is a federally- and state-listed Endangered species. This species is a neotropical migrant that breeds in low-elevation riparian habitats, particularly broad cottonwood-willow woodlands and mule fat scrub and is a rare and local summer resident in southern California. While destruction of lowland riparian habitats has played a large role in reducing the population of this species, brood parasitism by brown-headed cowbirds is likely the most important factor in its decline. There have been sporadic sightings of this species during the breeding season in Big Tujunga Creek as well a record of an observation in riparian scrub vegetation that had developed within the inundated bottom of a gravel pit in the San Gabriel Valley. This species has a low potential to occur at Vulcan Gravel Pit, Sheldon Pit, Cal Mat Pit, and Strathern Pit and it is not expected to occur at the remaining individual project component sites due to lack of potentially supporting habitat.

San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)

The San Diego black-tailed jackrabbit is a California Species of Special Concern. The San Diego subspecies of the widespread black-tailed jackrabbit is restricted to the western slope of the coastal mountain ranges from Santa Barbara County to northwestern Baja California. This nocturnal species prefers relatively open areas with sparse shrub cover. Although elements of potentially supporting habitat were observed or interpolated at Vulcan Gravel Pit, the vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit, this species is not expected to occur at any of the individual project component sites due to lack of suitable potentially supporting habitat.

Special Status Vegetation Types

In addition to providing an inventory of special status plant and wildlife species, the CNDDB also provides an inventory of vegetation types that are considered special status by the state and federal resource agencies, academic institutions, and various conservation groups (such as CNPS). Determination of the level of sensitivity is based on the Nature Conservancy Heritage Program Status Ranks that rank both species and vegetation types on a global and statewide basis according to the number and size of remaining occurrences as well as recognized threats (e.g., proposed developments, habitat degradation, and invasion by non-native species). Special status vegetation types within potential to occur in the project area are discussed below.

Riversidean Alluvial Fan Sage Scrub. Riversidean alluvial fan sage scrub is an open to moderately dense scrub vegetation type and is primarily restricted to floodplain habitats that only occasionally flood (e.g., every 5 to 10 years). As a result of the occasional flooding, many upland species may become established in this vegetation type. The occasional flooding and sediment reworking, however, is the driving force that maintains this vegetation type. It is typically dominated by scalebroom, though common subdominant shrub species include California sagebrush, Mexican elderberry, and various coastal sage scrub and chaparral species. Open understory areas are typically dominated by native and non-native herbaceous species usually associated with grassland communities, though some ruderal species may also occur. Scattered riparian trees and shrubs may also occur in association with this vegetation type, and include sycamore, mule fat, and sometimes Fremont cottonwood. This vegetation type is likely to have historically occurred within the Sun Valley Watershed Plan area conditions that would appear to support the development of this high value habitat were interpolated to be potentially present from reviews of aerial photographs at Vulcan Gravel, Shelden Pit, CalMat Pit, and Strathern Pit.

South Coast Live Oak Riparian Forest. South coast live oak riparian forest is an open to locally dense evergreen riparian vegetation type dominated by coast live oak (*Quercus agrifolia*). The understory of this vegetation type tends to support more grassland-related species than shrubs, as is more typically the case in other riparian communities. Although this vegetation type is likely to have historically occurred within the project area, it was not observed, and is not expected to occur, within any of the individual project component sites.

Southern Cottonwood-Willow Riparian Forest. Southern cottonwood-willow riparian forest is a tall, open, broadleafed winter-deciduous riparian vegetation type dominated by cottonwood and tree willow species. Coast live oak and alder (*Alnus rhombifolia*) may also form a secondary component of this vegetation type. The understory of this vegetation type is usually comprised of shrubby willows. This vegetation type is likely to have historically occurred within the project area. Though not observed, conditions that would appear to have the potential to support the development of this high value vegetation type were interpolated to be potentially present from reviews of aerial photographs at Vulcan Gravel, Shelden Pit, Cal Mat Pit and Strathern Pit.

Southern Sycamore-Alder Riparian Woodland. Southern sycamore-alder riparian woodland is a tall, open, broad-leafed, winter-deciduous streamside woodland dominated by sycamore and, occasionally, alder. Stands of this vegetation type rarely form closed canopy forests, and sometimes may appear as trees scattered in a shrubby thicket. Although this vegetation type is likely to have historically occurred within the project area, this vegetation type-type was not observed and is not expected to occur within any of the individual project component sites.

California Walnut Woodland. California walnut woodland is similar to, and intergrades with, South coast live oak woodland, but as a less dense or more open tree canopy locally dominated by southern California black walnut (*Juglans californica*). The open tree canopy allows development of an understory of grassland vegetation type components. Although this vegetation type is likely to have historically occurred within the project area, this vegetation type-type was not observed and is not expected to occur within any of the individual project component sites.

4.0 PROJECT IMPACTS

The following section analyzes impacts associated with construction, operation, and maintenance of the individual project components sites. The direct (both permanent and temporary) impacts to biological resources related to the construction of the individual project component sites are described in this section. The analysis of the potential impacts to those sites for which access was not granted is more programmatic; therefore, CEQA analysis for these areas has been based upon the assumed baseline conditions as interpolated from aerial photographs and oblique visual reconnaissance from immediately off-site and adjacent areas.

4.1 Significance Criteria

The potential significance of environmental impacts on biological resources has been assessed using impact significance criteria that mirror the policy contained in CEQA, Section 21001(c) of the California Public Resources Code. Accordingly, the State Legislature has established it to be the policy of the state to:

> *"Prevent the elimination of fish or wildlife species due to man's activities, ensure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities…"*

Determining whether a project may have a significant effect, or impact, plays a critical role in the CEQA process. According to CEQA, Section 15064.7–Thresholds of Significance, each public agency is encouraged to develop and adopt (by ordinance, resolution, rule, or regulation) thresholds of significance that the agency uses in the determination of the significance of environmental effects. A significance threshold is a quantitative, qualitative, or performance level of a particular environmental effect, that would normally be determined to be significant by the agency if the threshold is exceeded.

In the development of thresholds of significance for impacts on biological resources, CEQA provides guidance primarily in Section 15065–Mandatory Findings of Significance, and the CEQA Guidelines, Appendix G, Environmental Checklist Form. Section 15065(a) states that a project may have a significant effect where:

> *"The project has the potential to substantially 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 wildlife community, reduce the number or restrict the range of an Endangered, rare, or Threatened species…"*

Appendix G of the CEQA Guidelines is more specific in addressing biological resources and encompasses a broader range of resources to be considered, including: candidate, sensitive, or special status species; riparian habitat or other sensitive natural communities; federally protected wetlands; fish and wildlife movement corridors; local policies or ordinances protecting biological resources; and adopted habitat conservation plans. These factors are considered through the checklist of questions answered during the Initial Study process that is used to determine the appropriate type of environmental documentation for a project (Negative Declaration, Mitigated Negative Declaration, or EIR). Because these questions are derived from standards in other laws, regulations, and other commonly used thresholds, these standards have been used as the basis for defining significance thresholds in this EIR. For each of the thresholds identified below, the section of CEQA upon which the threshold was derived has been provided. For the purpose of this analysis, impacts on biological resources are considered significant (before considering offsetting mitigation measures) if one or more of the following conditions would result from implementation of the proposed project:

- *If the project has the potential to substantially degrade the quality of the environment (15065[a]),*
- *If the project has the potential to substantially reduce the habitat of a fish or wildlife species (15065[a]),*
- *If the project will cause a fish or wildlife populations to drop below self-sustaining levels (15065[a]),*
- *If the project will threaten to eliminate a plant or animal community (15065[a]),*
- *If the project will reduce the number or restrict the range of an Endangered, Rare, or Threatened species[1] (15065[a]),*
- *If the project has a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS (CEQA Guidelines, Appendix G, IV [a]),*
- *If the project has 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 (CEQA Guidelines, Appendix G, IV [b]),*
- *If the project has a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means (CEQA Guidelines, Appendix G, IV [c]),*

1 Endangered and threatened species referenced in this threshold are those listed by the USFWS and/or CDFG as Threatened or Endangered. Section 15380 of CEQA indicates that a lead agency can consider a non-listed species (e.g., CNPS List 1B plants) to be Endangered, Rare, or Threatened for the purposes of CEQA if the species can be shown to meet the criteria in the definition of rare or Endangered. For the purposes of this discussion, the current scientific knowledge on the population size and distribution for each special status species was considered in determining if a non-listed species met the definitions for Rare and Endangered according to Section 15380 of CEQA.

- *If the project interferes substantially with the movement of any native or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedes the use of native wildlife nursery sites (CEQA Guidelines, Appendix G, IV [d]),*

- *If the project conflicts with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (CEQA Guidelines, Appendix G, IV [e]),*

- *If the project conflicts with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan (CEQA Guidelines, Appendix G, IV. [f]).*

An evaluation of whether an impact on biological resources would result in a "substantial adverse effect" must consider both the resource itself and how that resource fits into a regional context. For the proposed project, the regional setting of the project includes the following USGS quads that cover the Sun Valley Watershed and that were queried in the records search: Burbank, San Fernando, Sunland, and Van Nuys.

For the purposes of this impact analysis, "substantial adverse effect" is defined as the loss or harm of a magnitude which, based on current scientific data and knowledge, would: 1) substantially diminish population numbers of a species or distribution of a habitat type within the region; or 2) eliminate the functions and values of a biological resource in the region.

4.2 Construction Impacts

Individual Project Components

Valley Steam Plant

Two surface retention areas would be constructed on the southern portion of the plant property to capture and infiltrate storm water collected from the plant property and the surrounding commercial/industrial areas.

Both Phase 1 and Phase 2 basins would need to be sited to avoid power line bases and other non-movable objects located on the plant property. Therefore, the proposed locations and shapes of the basins may be somewhat modified. Prior to Phase 2 construction, the abandoned railroad tracks located in the Phase 2 retention area would be removed.

General Habitat and Wildlife Loss

Construction at this location would result in the temporary and permanent loss of low value and/or disturbed habitats (e.g., ruderal and developed) and a low value habitat (e.g., non-native grassland) that support wildlife that have adapted to an environment modified by human activity and development. The removal or alteration of these low value habitats would have the potential to result in the loss of small mammals, reptiles, and other wildlife of slow mobility that live in the impact area. Direct construction impacts to habitats and wildlife would be a less than significant impact at this location, due to the low value of the habitat impacted and the relative abundance of the wildlife potentially impacted.

Wildlife Movement and Habitat Fragmentation

This site does not currently provide a functional connection between two or more habitat patches that would otherwise be fragmented or isolated from one another. Therefore, construction impacts to wildlife movement at this location are expected to be less than significant.

Special Status Plant Impacts

Special status plant species were not observed, and are not expected to occur, on this site because historic habitat modification and development has eliminated habitat or substrate with the potential to support these species. No impact to special status plants would occur at this site from project construction.

Special Status Wildlife Impacts

Special status wildlife species were not observed, and are not expected to occur, on this site because historic habitat modification and development has eliminated habitat with the potential to support these species. No impact to special status wildlife would occur at this site from project construction.

Special Status Vegetation Types Impacts

Historic habitat modification and development has eliminated all native vegetation types from this site and special status vegetation types were not observed. No impact to special status vegetation types would occur from project construction at this location

Vulcan Gravel Processing Plant

The proposed project involves construction of a surface retention area on the plant property to capture and infiltrate storm water. A 6-acre retention area would be constructed and would consist of a detention basin and an infiltration basin with a surrounding berm. To channel storm water into the retention area, the site may be graded to convey runoff by sheet flow, or an underground catch basin and pipeline system may be installed. A 10-horsepower sump pump and pipeline is proposed to convey some of the collected storm water to the existing 500,000-gallon storage tank from the retention area. The stored storm water may be reused onsite for gravel washing operations. No landscaping is proposed at this site.

General Habitat and Wildlife Loss

Construction at this location would result in the temporary and permanent loss of low value and/or disturbed habitats (e.g., ruderal and developed), low value habitat (e.g., non-native grassland), and potentially high value habitats (e.g., coastal sage scrub and riparian scrub) that support wildlife that have adapted to an environment modified by human activity and development. The removal or alteration of the habitats at this location would have the potential to result in the loss of small mammals, reptiles, and other wildlife of slow mobility that live in the impact area. More mobile wildlife species, particularly those that prefer coastal sage scrub habitat, would be forced to move into remaining adjacent areas of open space or lower value habitat, consequently increasing competition for available resources in those areas. This situation has the potential to result in the loss of individuals that cannot successfully compete in those areas. Direct construction impacts to coastal sage scrub and riparian scrub habitats and supported wildlife may be considered significant because of the sensitivity of this habitat in the region; however, opportunities for native habitat restoration on this site would have the potential to reduce these impacts to less than significant.

Wildlife Movement and Habitat Fragmentation

This site does not currently provide a functional connection between two or more habitat patches that would otherwise be fragmented or isolated from one another. Therefore, construction impacts to wildlife movement at this location are expected to be less than significant.

Special Status Plant Impacts

Habitat and/or substrate at this site has a limited potential to support the southern tarplant, San Fernando Valley spineflower, slender-horned spineflower, and Los Angeles sunflower and a low potential to support Nevin's barberry, Plummer's mariposa lily, Lewis' evening primrose, mesa horkelia, and Davidson's bush mallow. Access was not permitted to this site, so special status plant species could not be observed on this site during the field reconnaissance. Given the extent of disturbance and generally low potential for special status plant species to occur on the site, less than significant impacts to special status plant species are anticipated. However, should subsequent focused plant surveys identify special status plant species on this site within the proposed project footprint, then these impacts would represent a potentially significant impact. Impacts to species such as the Los Angeles sunflower or the San Fernando Valley spineflower, should they occur on the site, would be significant and unmitigable even if permitted by the USFWS and CDFG due to the fact that the impact would result in, at least a temporary, reduction of the overall population of those species. The habitat and substrates at this site provide an opportunity for retention of seed bank and revegetation with special status plants in conjunction with native habitat restoration.

Special Status Wildlife Impacts

Habitat at this site has a limited potential to support silvery legless lizard and southwestern pond turtle and a low potential to support orange-throated whiptail, San Diego horned lizard, and least Bell's vireo. Access was not permitted to this site, so special status wildlife species could not be observed on this site during the field reconnaissance. Given the extent of disturbance and generally low potential for special status wildlife species to occur on the site, less than significant impacts to special status wildlife species are anticipated at this location. However, should subsequent focused wildlife surveys identify special status wildlife species on this site within the proposed project footprint, these impacts would represent a potentially significant impact. Impacts to species such as the least Bell's vireo, should they occur on the site, would be significant and unmitigable even if permitted by the USFWS and CDFG due to the fact that the impact would result in, at least a temporary, reduction of the overall population of those species. Restoration of habitat at this site would provide an opportunity to attract special status wildlife in conjunction with native habitat restoration or revegetation.

Special Status Vegetation Type Impacts

Direct construction impacts to special status vegetation types (e.g., coastal sage scrub, Riversidian alluvial fan sage scrub, and southern cottonwood-willow riparian forest) may be considered significant because of the sensitivity of these habitats in the region; however, opportunities for native habitat restoration on this site would have the potential to reduce these impacts to less than significant. If, however, one or more of these habitats support special status species of plants or wildlife, then construction impacts would be significant and unmitigable even if permitted by the USFWS and CDFG.

Tuxford Green

The Tuxford Green individual project component consists of two phases. Phase 1 involves installation of three underground storage tanks on the southern corner of the Tuxford-San Fernando intersection (Tuxford Green) for storm water storage. The three tanks would have a combined total storage capacity of 330,000 gallons. Catch basins and underground pipelines would be constructed within Tuxford Street and San Fernando Road near the intersection to capture and convey storm water to the storage tanks. Water in excess of the tanks' storage capacity would exit the tanks through overflow pipes into the existing box culverts under Interstate 5.

In Phase 2 of the project, additional catch basins would be installed on San Fernando Road, Glenoaks Boulevard, and Tuxford Street to capture additional storm water runoff. Underground pipelines would be constructed along San Fernando Road, Tuxford Street, and along Glenoaks Boulevard to convey the water from the catch basins to the storage tanks installed in Phase 1.

The surface area above the tanks would be landscaped, and a demonstration garden with native plats and signage would be created to improve the aesthetic appeal of the area and provide opportunities for community education on water and flood control issues. It is proposed that local river rocks, which are used in historic buildings in Sun Valley's downtown area, be used to surface retaining walls and exposed concrete surfaces. An irrigation system would be installed to reuse some of the collected storm water for irrigating the new landscaped areas. In addition, the MTA bus stop located at the intersection could be relocated to the Tuxford Green site, providing a more comfortable waiting environment for the bus riders.

General Habitat and Wildlife Loss

Construction at this location would result in the temporary and permanent loss of low value and/or disturbed habitats (e.g., ruderal and developed) and a low value habitat (e.g., non-native grassland) that support wildlife that have adapted to an environment modified by human activity and development. The removal or alteration of these low value habitats would have the potential to result in the loss of small mammals, reptiles, and other wildlife of slow mobility that live in the impact area. Direct construction impacts to habitats and wildlife would be a less than significant impact at this location due to the low value of the habitat impacted and the relative abundance of the wildlife potentially impacted.

Wildlife Movement and Habitat Fragmentation

This site does not currently provide a functional connection between two or more habitat patches that would otherwise be fragmented or isolated from one another. Therefore, construction impacts to wildlife movement at this location are expected to be less than significant.

Special Status Plant Impacts

Special status plant species were not observed, and are not expected to occur, on this site due to the fact that historic habitat modification and development has eliminated habitat or substrate with the potential to support these species. No impact to special status plants would occur at this site from project construction.

Special Status Wildlife Impacts

Special status wildlife species were not observed, and are not expected to occur, on this site because historic habitat modification and development has eliminated habitat with the potential to support these species. No impact to special status wildlife would occur at this site from project construction.

Special Status Vegetation Type Impacts

Historic habitat modification and development has eliminated all native vegetation types from this site; as a result, no special status vegetation types were observed on this site. No impact to special status habitats would occur as a result of project construction.

Sun Valley Middle School

This individual project component proposes to use the school's sports field, staff parking lot and "quad" area. The sports field (the grass playing field and the paved basketball/volleyball courts) would be modified to create a shallow depression for collecting storm water. The 4.3-acre sports field would be excavated and graded to create a surface that slopes from the existing grade at the northwest corner to four feet below existing grade at the southeast corner, at a rate of one percent. Once excavation has been completed, the existing paved area would be repaved and the field would be re-sodded.

Two catch basins and a storm water inlet would be installed in Fair Avenue to convey storm water into the sports field. A retaining wall would be installed around the east and south edges of the field with a maximum height of four feet to contain water in the sports field.

Five 10,000-gallon underground storage tanks would be installed below the sports field. Each tank would be approximately six feet in diameter and 50 feet long. A trench drain and a pipe system would be installed to direct the storm water collected on the field surface into the storage tanks below. A horizontal perforated pipe system would be installed underneath the storage tanks. When the storage tanks are full, the excess storm water would infiltrate into the ground below through the perforated pipes.

Some of the storm water collected in the storage tanks under the sports field would be reused for onsite irrigation. A sump pump would be installed in the storage tank area to feed the proposed irrigation system, which would provide water for the playing field, Quad, staff parking, and other landscaped areas. A number of trees would be planted around the school buildings to provide shade and visual improvements for the campus.

The staff parking lot would be modified to collect and infiltrate storm water through dry wells. A planter would be installed at the north row of the parking lot between the curbs of the existing parking stalls. The dimensions of the planter would be approximately 5.5 feet by 390 feet. Approximately 22 dry wells (19-feet deep) would be installed within the planter. The surface openings of the dry wells would be encircled with a grassy swale area. Runoff from the west side of the school and the parking area would be channeled into the planter area and percolate into the ground through the dry wells.

The “quad” area would be excavated and depressed to a depth of two feet to collect storm water from the rooftops of the surrounding buildings. Five dry wells, similar to those proposed in the staff parking lot, would be installed in the depressed “quad” area to infiltrate the collected storm water.

General Habitat and Wildlife Loss

Construction at this location would result in the temporary and permanent loss of low value and/or disturbed habitats (e.g., ruderal and developed) that support wildlife that have adapted to an environment modified by human activity and development. The removal or alteration of these low value habitats would have the potential to result in the loss of small mammals, reptiles, and other wildlife of slow mobility that live in the impact area. Direct construction impacts to habitats and wildlife would be a less than significant impact at this location due to the low value of the habitat impacted and the relative abundance of the wildlife potentially impacted.

Wildlife Movement and Habitat Fragmentation

This site does not currently provide a functional connection between two or more habitat patches that would otherwise be fragmented or isolated from one another. Therefore, construction impacts to wildlife movement at this location are expected to be less than significant.

Special Status Plant Impacts

Special status plant species were not observed, and are not expected to occur, on this site due because historic habitat modification and development has eliminated habitat or substrate with the potential to support these species. No impact to special status plants would occur at this site from project construction.

Special Status Wildlife Impacts

Special status wildlife species were not observed, and are not expected to occur, on this site because historic habitat modification and development has eliminated habitat with the potential to support these species. No impact to special status wildlife would occur at this site as a result of project construction because the habitat on the site would not support special status wildlife species.

Special Status Vegetation Type Impacts

Historic habitat modification and development has eliminated all native vegetation types from this site; as a result, no special status vegetation types were observed on this site. No impact to special status vegetation types would occur from project construction.

<u>Lateral Storm Drains</u>

Many of the project components described above require installation of storm drains within existing road ways to collect and convey storm water from the street surfaces into the stormwater storage/infiltration facilities. During construction of the storm drains, existing pavement of the affected roadways would be removed. Once construction is complete, the roadways would be repaved and restored to their original conditions. There are no habitats or species present in these locations and no impacts to any biological resources would occur.

Vacant Lot on Wentworth

The project proposes to convert the vacant lot into a new park with various recreational facilities. Approximately 80 percent of the project site would be excavated to create a shallow depression, with an average depth of 2 feet. The depressed area would be surfaced with grass or other vegetation and used as a field under normal conditions. During storms, the field would be used to collect and infiltrate storm water. In a 50-year storm, the depressed area would be filled with water, but is expected to be dry within two days. Catch basins and pipelines would be installed in the surrounding streets to convey storm water from the surrounding areas into the new park.

The park could be landscaped with native plants to provide habitat for terrestrial species. No riparian habitat will be provided since water would infiltrate in less than two days.

General Habitat and Wildlife Loss

Construction at this location would result in the temporary and permanent loss of low value and/or disturbed habitats (e.g., ruderal and developed), low value habitat (e.g., non-native grassland), and potentially high value (e.g., coastal sage scrub) that support wildlife that have adapted to an environment modified by human activity and development. The removal or alteration of the habitats at this location would have the potential to result in the loss of small mammals, reptiles, and other wildlife of slow mobility that live in the impact area. More mobile wildlife species, particularly those that prefer coastal sage scrub habitat, would be forced to move into remaining adjacent areas of open space or lower value habitat, consequently increasing competition for available resources in those areas. This situation has the potential to result in the loss of individuals that cannot successfully compete in those areas. Direct construction impacts to coastal sage scrub habitat and supported wildlife may be considered significant because of the sensitivity of this habitat in the region; however, opportunities for native habitat restoration on this site would have the potential to reduce these impacts to less than significant.

Wildlife Movement and Habitat Fragmentation

This site does not currently provide a functional connection between two or more habitat patches that would otherwise be fragmented or isolated from one another. Therefore, construction impacts to wildlife movement at this location are expected to be less than significant.

Special Status Plant Impacts

Habitat and/or substrate at this site has a limited potential to support southern tarplant, San Fernando Valley spineflower, and slender-horned spineflower and a low potential to support Nevin's barberry, Plummer's mariposa lily, Lewis' evening primrose, mesa horkelia, and Davidson's bush mallow. Given the extent of disturbance and generally low potential for special status plant species to occur on the site, less than significant impacts to special status plant species are anticipated. However, should subsequent focused plant surveys identify special status plant species on this site within the proposed project footprint, then such impacts would be potentially significant. Impacts to species such as the Los Angeles sunflower or the San Fernando Valley spineflower, should they occur on the site, would be significant and unmitigable even if permitted by the USFWS and CDFG due to the fact that the impact would result in, at least a temporary, reduction of the overall population of those species. The habitat and substrates at this site provide an opportunity for retention of seed bank and revegetation with special status plants in conjunction with native habitat restoration.

Special Status Wildlife Impacts

Habitat at this site has a limited potential to support silvery legless lizard and a low potential to support orange-throated whiptail, and San Diego horned lizard. Given the extent of disturbance and generally low potential for special status wildlife species to occur on the site, less than significant impacts to special status plant species are anticipated. However, should subsequent surveys identify special status wildlife species on this site within the proposed project footprint, then these impacts would be potentially significant. Restoration of habitat at this site would provide an opportunity to provide habitat with the potential to support special status wildlife species.

Special Status Vegetation Type Impacts

Direct construction impacts to coastal sage scrub habitat may be considered significant because of the sensitivity of this habitat in the region; however, opportunities for native habitat restoration on this site would have the potential to reduce these impacts to less than significant.

<u>Stonehurst Park</u>

The proposed project would involve modification of the parks' field area to capture and infiltrate storm water. Approximately 20 percent of the park area would be excavated to create a shallow depression with an average depth of 2 feet. Once construction is complete, the surface would be restored to its original state. Catch basins and pipelines would be installed in the surrounding streets to direct storm water from the surrounding residential areas into the field area. During large storms, water would pond in the depressed field area and ultimately infiltrate into the ground. In a 50-year storm, the depressed area would be filled with water, but is expected to be dry within two days. The park will be landscaped with native plants to provide habitat for terrestrial wildlife species.

General Habitat and Wildlife Loss

Construction at this location would result in the temporary and permanent loss of low value and/or disturbed habitats (e.g., ruderal and developed) that support wildlife that have adapted to an environment modified by human activity and development. The removal or alteration of these low value habitats would have the potential to result in the loss of small mammals, reptiles, and other wildlife of slow mobility that live in the impact area. Direct construction impacts to habitats and wildlife would be a less than significant impact at this location due to the low value of the habitat impacted and the relative abundance of the wildlife potentially impacted.

Wildlife Movement and Habitat Fragmentation

This site does not currently provide a functional connection between two or more habitat patches that would otherwise be fragmented or isolated from one another. Therefore, construction impacts to wildlife movement at this location are expected to be less than significant.

Special Status Plant Impacts

Special status plant species were not observed, and are not expected to occur, on this site because historic habitat modification and development has eliminated habitat or substrate with the potential to support these species. No impact to special status plants would occur at this site from project construction.

Special Status Wildlife Impacts

Special status wildlife species were not observed, and are not expected to occur, on this site because historic habitat modification and development has eliminated habitat with the potential to support these species. No impact to special status wildlife would occur at this site from project construction.

Special Status Vegetation Type Impacts

Historic habitat modification and development has eliminated all native vegetation types from this site and no special status vegetation types were observed. No impact to special status vegetation types would occur from project construction.

<u>Stonehurst Elementary School</u>

The proposed project would install underground tanks for storm water storage and infiltration beneath the school's playground, parking lot, and other open areas. Approximately 3 acres of open areas are available within the school site. The project would install subsurface stormwater infiltration devices in approximately 60 percent of the open areas. Existing pavement or grass surfaces would be removed for construction, but all surfaces would be restored to their original condition or improved with landscaping once the tanks have been installed.

General Habitat and Wildlife Loss

Construction at this location would result in the temporary and permanent loss of low value and/or disturbed habitats (e.g., ruderal and developed) that support wildlife that have adapted to an environment modified by human activity and development. The removal or alteration of these low value habitats would have the potential to result in the loss of small mammals, reptiles, and other wildlife of slow mobility that live in the impact area. Direct construction impacts to habitats and wildlife would be a less than significant impact at this location due to the low value of the habitat impacted and the relative abundance of the wildlife potentially impacted.

Wildlife Movement and Habitat Fragmentation

This site does not currently provide a functional connection between two or more habitat patches that would otherwise be fragmented or isolated from one another. Therefore, construction impacts to wildlife movement at this location are expected to be less than significant.

Special Status Plant Impacts

Special status plant species were not observed, and are not expected to occur, on this site because historic habitat modification and development has eliminated habitat or substrate with the potential to support these species. No impact to special status plants would occur at this site from project construction.

Special Status Wildlife Impacts

Special status wildlife species were not observed, and are not expected to occur, on this site because historic habitat modification and development has eliminated habitat with the potential to support these species. No impact to special status wildlife would occur at this site from project construction.

Special Status Vegetation Type Impacts

Historic habitat modification and development has eliminated all native vegetation types from this site and no special status vegetation types were observed. No impact to special status vegetation types would occur from project construction.

<u>Roscoe Elementary School</u>

The proposed project would install underground tanks for storm water storage and infiltration beneath the school's playground, parking lot, and other open space areas. Approximately 2.5 acres of open areas are available within the school site. The project would install subsurface stormwater infiltration devices in approximately 60 percent of the open areas. Existing pavement or grass surfaces would be removed for construction, but all surfaces would be restored to their original condition or improved with landscaping once the tanks have been installed.

General Habitat and Wildlife Loss

Construction at this location would result in the temporary and permanent loss of low value and/or disturbed habitats (e.g., ruderal and developed) that support wildlife that have adapted to an environment modified by human activity and development. The removal or alteration of these low value habitats would have the potential to result in the loss of small mammals, reptiles, and other wildlife of slow mobility that live in the impact area. Direct construction impacts to habitats and wildlife would be a less than significant impact at this location due to the low value of the habitat impacted and the relative abundance of the wildlife potentially impacted.

Wildlife Movement and Habitat Fragmentation

This site does not currently provide a functional connection between two or more habitat patches that would otherwise be fragmented or isolated from one another. Therefore, construction impacts to wildlife movement at this location are expected to be less than significant.

Special Status Plant Impacts

Special status plant species were not observed, and are not expected to occur, on this site because historic habitat modification and development has eliminated habitat or substrate with the potential to support these species. No impact to special status plants would occur at this site as a result of project construction.

Special Status Wildlife Impacts

Special status wildlife species were not observed, and are not expected to occur, on this site because historic habitat modification and development has eliminated habitat with the potential to support these species. No impact to special status wildlife would occur at this site from project construction.

Special Status Vegetation Type Impacts

Historic habitat modification and development has eliminated all native vegetation types from this site and no special status vegetation types were observed. No impact to special status vegetation types would occur from project construction.

Sheldon Pit with Tujunga Wash Diversion

This project proposes to convert the existing landfill area to a surface storm water retention and treatment area. In addition to capturing storm water from surrounding areas, Sheldon Pit would be used to store and infiltrate some of the flows of Tujunga Wash to augment the groundwater recharge capacity of Hansen Spreading Grounds.

In order to capture and infiltrate storm water and flows from Tujunga Wash, approximately half of Sheldon Pit would be modified to create the following four areas: 1) Storm Water Retention (10 acres with average depth of 29 feet below street level), 2) Transfer Retention (17 acres with average depth of 43 feet), 3) Treatment Wetland (33 acres), and 4) Infiltration Basin (26 acres).

To convey storm water into the Storm Water Retention area, collector drains would be installed in Glenoaks Boulevard and Sheldon Street. The Storm Water Retention area would be terraced to provide recreational use of the side slopes during dry conditions.

To divert flows from Tujunga Wash into the Transfer Retention area, a section of the Tujunga Wash's concrete channel bottom would be lowered by approximately 10 feet to capture a portion of the storm flows that bypass the existing diversion to Hansen Spreading Grounds.

General Habitat and Wildlife Loss

Construction at this location would result in the temporary and permanent loss of low value and/or disturbed habitats (e.g., ruderal and developed), low value habitat (e.g., non-native grassland), and potentially high value habitats (e.g., coastal sage scrub and riparian scrub) that support wildlife that have adapted to an environment modified by human activity and development. The removal or alteration of the habitats at this location would have the potential to result in the loss of small mammals, reptiles, and other wildlife of slow mobility that live in the impact area. More mobile wildlife species, particularly those that prefer coastal sage scrub habitat, would be forced to move into remaining adjacent areas of open space or lower value habitat, consequently increasing competition for available resources in those areas. This situation has the potential to result in the loss of individuals that cannot successfully compete in those areas. Direct construction impacts to coastal sage scrub and riparian scrub habitats and supported wildlife may be considered significant because of the sensitivity this habitat in the region; however, opportunities for native habitat restoration on this site would have the potential to reduce these impacts to less than significant.

Wildlife Movement and Habitat Fragmentation

This site does not currently provide a functional connection between two or more habitat patches that would otherwise be fragmented or isolated from one another. Therefore, construction impacts to wildlife movement at this location are expected to be less than significant. Portions of the Tujunga Wash Diversion may provide an opportunity for revegetation or restoration with native habitats that would have the potential to support wildlife movement through the watershed

Special Status Plants Impacts

Habitat and/or substrate at this site has a limited potential to support southern tarplant, San Fernando Valley spineflower, slender-horned spineflower and Los Angeles sunflower and a low potential to support Nevin's barberry, Plummer's mariposa lily, Lewis' evening primrose, mesa horkelia, and Davidson's bush mallow. Access was not permitted to this site, so special status plant species could not be observed on this site during the field reconnaissance. Given the extent of disturbance and generally low potential for special status plant species to occur on the site, less than significant impacts to special status plant species are anticipated. However, should subsequent focused plant surveys identify special status plant species on this site within the proposed project footprint, these impacts would represent a potentially significant impact. Impacts to species such as the Los Angeles sunflower or the San Fernando Valley spineflower, should they occur on the site, would be significant and unmitigable even if permitted by the USFWS and CDFG due to the fact that the impact would result in, at least a temporary, reduction of the overall population of those species. The habitat and substrates at this site provides an opportunity for retention of seed bank and revegetation with special status plants in conjunction with native habitat restoration.

Special Status Wildlife Impacts

Habitat at this site has a limited potential to support silvery legless lizard and southwestern pond turtle and a low potential to support orange-throated whiptail, San Diego horned lizard, and least Bell's vireo. Access was not permitted to this site, so special status wildlife species could not be observed on this site during the field reconnaissance. Given the extent of disturbance and generally low potential for special status wildlife species to occur on the site, less than significant impacts to special status wildlife species are anticipate at this location. However, should subsequent focused wildlife surveys identify special status wildlife species on this site within the proposed project footprint, these impacts would represent a potentially significant impact. Impacts to species such as the least Bell's vireo, should they occur on the site, would be significant and unmitigable even if permitted by the USFWS and CDFG due to the fact that the impact would result in, at least a temporary, reduction of the overall population of those species. Restoration of habitat at this site would provide an opportunity to provide habitat with the potential to support special status wildlife species in conjunction with native habitat restoration or revegetation.

Special Status Vegetation Type Impacts

Direct construction impacts to special status vegetation types (e.g., coastal sage scrub, Riversidian alluvial fan sage scrub, and southern cottonwood-willow riparian forest) may be considered significant because of the sensitivity of these habitats in the region; however, opportunities for native habitat restoration on this site would have the potential to reduce these impacts to less than significant. If, however, one or more of these habitats support special status species of plants or wildlife, construction impacts would be significant and unmitigable even if permitted by the USFWS and CDFG due to the fact that the impact would result in, at least a temporary, reduction of the overall population of those species.

<u>Cal Mat Pit</u>

The 30-acre area on the northeastern portion of Cal Mat Pit (project site) would be used as a surface storm water retention area. The project would be implemented in three phases: Phase 1, Interim Phase, and Phase 2.

During Phase 1, the project site would be converted into a storm water retention area, consisting of a 15-acre detention basin and a 5-acre infiltration basin. Berms (approximately 15-feet high) would be constructed to separate the proposed retention area from the existing landfill area to the south and to separate the two proposed basins. A storm water inlet, a set of eight catch basins, and an underground pipeline would be installed in the surrounding streets to collect and convey storm water into the retention area. The retention area would temporarily store then infiltrate the storm water.

The area around the basins would be landscaped with low maintenance and drought tolerant vegetation. Public access to the site is not proposed during Phase 1. An irrigation system would be installed to use a portion of the collected storm water to irrigate the proposed landscaped areas.

Recreational facilities proposed for the park include trails, open areas for picnicking and sports, and non-motorized boating and other water sports. Improvements to the new park area would include landscaping, tree planting, and a native plant garden to provide recreation, wildlife habitat, environmental education, and aesthetic values. Part of the collected storm water would be used to irrigate the proposed plantings. The new park area may be connected to the adjacent Stonehurst Recreation Center and Park.

General Habitat and Wildlife Loss

Construction at this location would result in the temporary and permanent loss of low value and/or disturbed habitats (e.g., ruderal and developed), low value habitat (e.g., non-native grassland), and potentially high value habitats (e.g., coastal sage scrub and riparian scrub) that support wildlife that have adapted to an environment modified by human activity and development. The removal or alteration of the habitats at this location would have the potential to result in the loss of small mammals, reptiles, and other wildlife of slow mobility that live in the impact area. More mobile wildlife species, particularly those that prefer coastal sage scrub habitat, would be forced to move into remaining adjacent areas of open space or lower value habitat, consequently increasing competition for available resources in those areas. This situation has the potential to result in the loss of individuals that cannot successfully compete in those areas. Direct construction impacts to coastal sage scrub and riparian scrub habitats and supported wildlife may be considered significant because of the sensitivity the habitat in the region; however, opportunities for native habitat restoration on this site would have the potential to reduce these impacts to less than significant.

Wildlife Movement and Habitat Fragmentation

This site does not currently provide a functional connection between two or more habitat patches that would otherwise be fragmented or isolated from one another. Therefore, construction impacts to wildlife movement at this location are expected to be less than significant.

Special Status Plant Impacts

Habitat and/or substrate at this site has a limited potential to support the southern tarplant, San Fernando Valley spineflower, slender-horned spineflower, and Los Angeles sunflower and a low potential to support Nevin's barberry, Plummer's mariposa lily, Lewis' evening primrose, mesa horkelia, and Davidson's bush mallow. Access was not permitted to this site, so special status plant species could not be observed on this site during the field reconnaissance. Given the extent of disturbance and generally low potential for special status plant species to occur on the site, less than significant impacts to special status plant species are anticipated. However, should subsequent focused plant surveys identify special status plant species on this site within the proposed project footprint, these impacts would represent a potentially significant impact. Impacts to species such as the Los Angeles sunflower or the San Fernando Valley spineflower, should they occur on the site, would be significant and unmitigable even if permitted by the USFWS and CDFG due to the fact that the impact would result in, at least a temporary, reduction of the overall population of those species. The habitat and substrates at this site provide an opportunity for retention of seed bank and revegetation with special status plants in conjunction with native habitat restoration or revegetation.

Special Status Wildlife Impacts

Habitat at this site has a limited potential to support silvery legless lizard and southwestern pond turtle and a low potential to support orange-throated whiptail, San Diego horned lizard, and least Bell's vireo. Access was not permitted to this site, so special status wildlife species could not be observed on this site during the field reconnaissance. Given the extent of disturbance and generally low potential for special status wildlife species to occur on the site, less than significant impacts to special status wildlife species are anticipate at this location. However, should subsequent focused wildlife surveys identify special status wildlife species on this site within the proposed project footprint, these impacts would represent a potentially significant impact. Impacts to species such as the least Bell's vireo, should they occur on the site, would be significant and unmitigable even if permitted by the USFWS and CDFG due to the fact that the impact would result in, at least a temporary, reduction of the overall population of those species. Restoration of habitat at this site would provide an opportunity for special status wildlife in conjunction with native habitat restoration or revegetation.

Special Status Vegetation Type Impacts

Direct construction impacts to special status vegetation types (e.g., coastal sage scrub, Riversidian alluvial fan sage scrub, and southern cottonwood-willow riparian forest) may be considered significant because of the sensitivity of this habitat in the region; however, opportunities for native habitat restoration on this site would have the potential to reduce these impacts to less than significant. If, however, one or more of these habitats support special status species of plants or wildlife, then construction impacts would be significant and unmitigable even if permitted by the USFWS and CDFG due to the fact that the impact would result in, at least a temporary, reduction of the overall density of the supporting habitat

Strathern Pit

This project proposes to convert the existing landfill area into a surface storm water retention and treatment area. The existing landfill surface would be modified to create terraced side slopes with 5 levels. The deepest part of the pit would be approximately 50 feet below street level. The bottom portion of the basin would be designed and operated as a wetland consistent with EPA's guidelines for stormwater treatment wetlands. The basin would be lined with impervious material (geotextiles), and no onsite infiltration of storm water would occur at this site.

General Habitat and Wildlife Loss

Construction at this location would result in the temporary and permanent loss of low value and/or disturbed habitats (e.g., ruderal and developed), low value habitat (e.g., non-native grassland), and potentially high value habitats (e.g., coastal sage scrub and riparian scrub) that support wildlife that have adapted to an environment modified by human activity and development. The removal or alteration of the habitats at this location would have the potential to result in the loss of small mammals, reptiles, and other wildlife of slow mobility that live in the impact area. More mobile wildlife species, particularly those that prefer coastal sage scrub habitat, would be forced to move into remaining adjacent areas of open space or lower value habitat, consequently increasing competition for available resources in those areas. This situation has the potential to result in the loss of individuals that cannot successfully compete in those areas. Direct construction impacts to coastal sage scrub and riparian scrub habitats and supported wildlife may be considered significant because of the sensitivity of this habitat in the region; however, opportunities for native habitat restoration on this site would have the potential to reduce these impacts to less than significant.

Wildlife Movement and Habitat Fragmentation

This site does not currently provide a functional connection between two or more habitat patches that would otherwise be fragmented or isolated from one another. Therefore, construction impacts to wildlife movement at this location are expected to be less than significant.

Special Status Plant Impacts

Habitat and/or substrate at this site has a limited potential to support the southern tarplant, San Fernando Valley spineflower, slender-horned spineflower, and Los Angeles sunflower and a low potential to support Nevin's barberry, Plummer's mariposa lily, Lewis' evening primrose, mesa horkelia, and Davidson's bush mallow. Access was not permitted to this site, so special status plant species could not be observed on this site during the field reconnaissance. Given the extent of disturbance and generally low potential for special status plant species to occur on the site, less than significant impacts to special status plant species is anticipated. However, should subsequent focused plant surveys identify special status plant species on this site within the proposed project footprint, these impacts would represent a potentially significant impact. Impacts to species such as the Los Angeles sunflower or the San Fernando Valley spineflower, should they occur on the site, would be significant and unmitigable even if permitted by the USFWS and CDFG due to the fact that the impact would result in, at least a temporary, reduction of the overall population of those species. The habitat and substrates at this site provides an opportunity for retention of seed bank and revegetation with special status plants in conjunction with native habitat restoration or revegetation.

Special Status Wildlife Impacts

Habitat at this site has a limited potential to support silvery legless lizard and southwestern pond turtle and a low potential to support orange-throated whiptail, San Diego horned lizard, and least Bell's vireo. Access was not permitted to this site, so special status wildlife species could not be observed on this site during the field reconnaissance. Given the extent of disturbance and generally low potential for special status wildlife species to occur on the site, less than significant impacts to special status wildlife species are anticipate at this location. However, should subsequent focused wildlife surveys identify special status wildlife species on this site within the proposed project footprint, then these impacts would represent a potentially significant impact. Impacts to species such as the least Bell's vireo, should they occur on the site, would be significant and unmitigable even if permitted by the USFWS and CDFG due to the fact that the impact would result in, at least a temporary, reduction of the overall population of those species. Restoration of habitat at this site would provide an opportunity to provide habitat with the potential to support special status wildlife species in conjunction with native habitat restoration or revegetation.

Special Status Vegetation Type Impacts

Direct construction impacts to special status vegetation types (e.g., coastal sage scrub, Riversidian alluvial fan sage scrub, and southern cottonwood-willow riparian forest) may be considered significant because of the sensitivity of these habitats in the region; however, opportunities for native habitat restoration on this site would have the potential to reduce these impacts to less than significant. If, however, one or more of these habitats support special status species of plants or wildlife, then construction impacts would be significant and unmitigable even if permitted by the USFWS and CDFG due to the fact that the impact would result in, at least a temporary, reduction of the overall density of habitat that supports those species

<u>Commercial Parking Lot on Sherman</u>

This project would involve installation of subsurface storm water infiltration devices beneath the existing parking areas (total of 18 acres) around the commercial buildings. The pavement would be removed for construction but would be restored after installation of the tanks. Trees may be planted between the stalls. Catch basins would be installed in the surrounding streets to collect and convey storm water to the proposed tanks.

General Habitat and Wildlife Loss

Construction at this location would result in the temporary and permanent loss of low value and/or disturbed habitats (e.g., ruderal and developed) that support wildlife that have adapted to an environment modified by human activity and development. The removal or alteration of these low value habitats would have the potential to result in the loss of small mammals, reptiles, and other wildlife of slow mobility that live in the impact area. Direct construction impacts to habitats and wildlife would be a less than significant impact at this location.

Wildlife Movement and Habitat Fragmentation

This site does not currently provide a functional connection between two or more habitat patches that would otherwise be fragmented or isolated from one another. Therefore, construction impacts to wildlife movement at this location are expected to be less than significant.

Special Status Plant Impacts

Special status plant species were not observed, and are not expected to occur, on this site because historic habitat modification and development has eliminated habitat or substrate with the potential to support these species. No impact to special status plants would occur at this site as a result of project construction because potentially supporting habitat or substrate does not occur.

Special Status Wildlife Impacts

Special status wildlife species were not observed, and are not expected to occur, on this site because historic habitat modification and development has eliminated habitat with the potential to support these species. No impact to special status wildlife would occur at this site as a result of project construction.

Special Status Vegetation Type Impacts

Historic habitat modification and development has eliminated all native vegetation types from this site and no special status vegetation types were observed. No impact to special status vegetation types would occur from project construction.

<u>Power Line Easement</u>

The project proposes to construct a series of sedimentation basins and infiltration basins within the easement between the power line towers to collect storm water. A collector storm drain would be constructed in Oxnard Street to direct runoff to the sedimentation basins. The sedimentation basins would be approximately 1,500 square feet in area and 6 feet in depth, and would be used to settle pollutants and remove trash from the stormwater. The water would then drain into the infiltration basins, which would range from 6 to 16 acres in size and have a maximum depth of 19 feet with 4:1 side slopes. The proposed project involves use of 3 to 7 easement segments between Clybourn Avenue and Tujunga Avenue.

General Habitat and Wildlife Loss

Construction at this location would result in the temporary and permanent loss of low value and/or disturbed habitats (e.g., ruderal and developed) and a low value habitat (e.g., non-native grassland) that support wildlife that have adapted to an environment modified by human activity and development. The removal or alteration of these low value habitats would have the potential to result in the loss of small mammals, reptiles, and other wildlife of slow mobility that live in the impact area. Direct construction impacts to habitats and wildlife would be a less than significant impact at this location.

Wildlife Movement and Habitat Fragmentation

This site does not currently provide a functional connection between two or more habitat patches that would otherwise be fragmented or isolated from one another. Therefore, construction impacts to wildlife movement at this location are expected to be less than significant. Portions of the powerline easement may provide an opportunity for revegetation or restoration with native habitats that would have the potential to support regional wildlife movement through the watershed.

Special Status Plant Impacts

Special status plant species were not observed, and are not expected to occur, on this site because historic habitat modification and development has eliminated habitat or substrate with the potential to support these species. No impact to special status plants would occur at this site from project construction. Portions of the powerline easement may provide an opportunity for revegetation or restoration with native plants, such as Nevin's barberry and Plummer's mariposa lily, in conjunction with native habitat restoration or revegetation.

Special Status Wildlife Impacts

Special status wildlife species were not observed, and are not expected to occur, on this site because historic habitat modification and development has eliminated habitat with the potential to support these species. No impact to special status wildlife would occur at this site as a result of project construction.

Special Status Vegetation Type Impacts

Historic habitat modification and development has eliminated all native vegetation types from this site and no special status vegetation types were observed. No impact to special status vegetation types would occur from project construction. Portions of the powerline easement may provide an opportunity for revegetation or restoration with native habitats such as coastal sage scrub.

Street Storage

This component involves installation of underground storage tanks and infiltration galleries within existing roadways. This component is proposed in the southern portion of the watershed, which is the area below the intersection of Interstate 5, Tuxford Street, and San Fernando Road. Each unit of street storage would be 6 feet deep and have a width equal to that of the street. The units would be filled with gravel to maintain the street's structural integrity. Street surfaces would be repaved to their original condition once project construction has been completed. The exact locations of the tanks are to be determined. The total length of roadways that would be used for street storage range from 0.4 to 5.1 miles, depending on the alternative. There are no habitats or species present in these locations and no impacts to any biological resources would occur.

Onsite BMPs

Stormwater Best Management Practices (BMPs) are techniques and methods that manage stormwater by promoting onsite storage and infiltration and/or reducing pollutants in runoff. A wide variety of BMPs are available, including installation of cisterns, infiltrators, and dry wells, use of porous pavement, mulching, tree planting, and education.

The onsite BMPs proposed as a part of the Sun Valley Watershed Management Plan would be relatively small scale and would be implemented at residential, commercial, and industrial parcels in the southern portion of the watershed. Some of the storm water captured in cisterns, for example, could be reused onsite for irrigation and other non-potable uses of water.

Participation in the use of these onsite BMPs would be voluntary; therefore, exact locations of onsite BMPs cannot be determined at this time. There are no native habitats or wildlife species present in these locations and no impacts to any biological resources would occur.

Trunk Storm Drain

In addition to the city lateral storm drains, Alternatives 2 and 4 would involve construction of a trunk storm drain within existing roadway(s) in the southern half of the watershed. The trunk storm drain would connect to existing storm drains located at the southern end of the watershed, which ultimately drain to the Los Angeles River. During construction, existing pavement of the affected roadways would be removed. Once construction is complete, the roadways would be repaved and restored to their original conditions. There are no habitats or species present in these locations and no impacts to any biological resources would occur.

4.3 Operational Impacts

Though construction-related activities would be the initial project-related impacts, operation and maintenance activities may be required on an ongoing basis in the project area to ensure the function of the individual project components. Anticipated operation and maintenance activities at individual project component sites, and their potential biological resources impacts, are discussed below.

- Operation and maintenance requirements for the Valley Steam Plant component include landscaping maintenance, irrigation system maintenance, operation of the pumps, maintenance of the pumps and pump control panel, mosquito control, sediment removal from the basins, separation system cleaning, catch basin and drain cleaning, inspection of the pumps, basins, and tank farm berms, and total system inspection. Operation and maintenance activities implemented consistent with the requirements of project approvals or permits would result in a less than significant impact.

- Operation and maintenance required for Vulcan Gravel component includes pump operation, pump maintenance, sediment removal from the basins, stand pipe cleaning, pump inspection, and total system inspection. Operation and maintenance activities implemented consistent with the requirements of project approvals or permits would result in a less than significant impact.

- Operation and maintenance requirements for the Tuxford Green component include maintenance of landscaping, irrigation system maintenance, sediment removal from the storage tanks, pump maintenance, catch basin and drain cleaning, and total system inspection. Operation and maintenance activities implemented consistent with the requirements of project approvals or permits would result in less than significant impacts.

- Operation and maintenance requirements for Sun Valley Middle School component include maintenance of landscaped areas, maintenance of irrigation and disinfection system, separation system cleaning, storage tank cleaning, pump maintenance, catch basin and drain cleaning, and total system inspection. Operation and maintenance activities implemented consistent with the requirements of project approvals or permits would result in less than significant impacts.

- Maintenance at the vacant lot on Wentworth component would include removal of sediment and debris from the infiltration area and regular park maintenance, in coordination with the City of Los Angeles Department of Recreation and Parks. Operation and maintenance activities implemented consistent with the requirements of project approvals or permits would result in less than significant impacts.

- Maintenance at the Stonehurst Park component would include removal of sediment and debris from the infiltration area. Operation and maintenance activities implemented consistent with the requirements of project approvals or permits would result in less than significant impacts.

- The collected storm water from the Sheldon Pit component would be transferred from the Storm Water Retention area to the Treatment Wetland area, where some of the pollutants would be removed. The wetland area would be designed and operated consistent with EPA's guidelines for stormwater treatment wetlands, and most of its area would consist of shallow ponds of less than one foot in depth. After circulating through the Treatment Wetland, the water would be deposited into groundwater in the Infiltration Basin portion of the pit. During dry weather conditions, water would repeatedly circulate through the wetland to maintain an appropriate water level, and no water would leave the wetland area. Captured storm flows would be diverted into the proposed Transfer Retention area within Sheldon Pit through a 4-feet high by 7-feet wide reinforced concrete box culvert, fitted with a slide gate to control diversions. Additional channel modifications may be necessary upon further hydrologic analysis. Water diverted from Tujunga Wash would be transferred from the Transfer Retention area into the Infiltration Basin area to recharge the groundwater basin. The portions of the pit around the proposed retention basins (up to 40 acres) could be used for passive and active recreation. New recreational facilities could be linked with the nearby Hansen Golf Course. The retention areas and the surrounding areas could also be used to provide wetland and terrestrial habitat. It is expected that Vulcan will continue to use Sheldon Pit for supply and disposal of gravel wash water. Operation and maintenance activities implemented consistent with the requirements of project approvals or permits would result in less than significant impacts.

- Operation and maintenance responsibilities of the park facilities at the Cal Mat Pit component would be transferred to the Los Angeles City Department of Recreation and Parks during/after Phase 2. Operation and maintenance requirements for Phase 2 flood control facilities include maintenance of landscaped areas and the irrigation system, mosquito control measures, operation and maintenance of the lake, sediment removal from the lake, separation system cleaning, catch basin and drain cleaning, and total system inspection. Operation and maintenance activities implemented consistent with the requirements of project approvals or permits would result in less than significant impacts.

- In the Strathern Pit component, the terraced areas above the wetland would be dry most of the time and would be available for recreational and/or habitat uses. During dry weather periods (summer), water levels in the wetland would be maintained by repeated circulation. Most of the wetland area would consist of shallow ponds of less than one foot in depth. During this recirculation period, no water would leave the project site. During large storms, the area above the wetland would be use to store storm water. Storm water captured in the basin would be circulated through the wetland, which would be designed to remove some of the pollutants. Operation and maintenance activities implemented consistent with the requirements of project approvals or permits would result in less than significant impacts.

- The sedimentation/infiltration areas in the Power Line Easement may be landscaped and used for passive recreation, such as community gardens, picnic areas, or other open space uses, and as habitat for local terrestrial and bird species. Eventually, this could be part of a habitat linkage to the Hansen Dam area along the power line corridor. Maintenance would include routine sediment and trash removal from the basins. Operation and maintenance activities implemented consistent with the requirements of project approvals or permits would result in less than significant impacts.

- Operation of the project overall would have the potential to result in a net beneficial impact on biological resources. The three gravel pits (Cal Mat Pit, Sheldon Pit, and Strathern Pit) provide the greatest opportunities for native habitat restoration. Due to its size and proximity to existing nearby habitat areas (e.g., Hansen Dam), the wetland area and habitat restoration proposed at Sheldon Pit is expected to have the most beneficial impact on biological resources among the three gravel pits.

5.0 MITIGATION MEASURES

Construction Impacts

Mitigation for removal or alteration of potentially high value vegetation types (e.g., coastal sage scrub and/or southern willow scrub) at Vulcan Gravel, the vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and Strathern Pit would consist of the following measures:

- Prior to construction of Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit, the sites will be surveyed in accordance with agency protocols at the appropriate time of the year for the presence or absence of high-value native vegetation and habitats, including special status vegetation and wetland or riparian vegetation. If high value vegetation/habitat types are identified, the proposed facilities will be designed and/or sited to avoid or minimize disturbance and loss of the vegetation and habitats during construction. However, depending on the location of sensitive resources at the sites, if any, project redesign that avoids the biological resources while still meeting the flood control objective of the project component may be infeasible. For example, the large size of the stormwater retention/infiltration basins proposed for the gravel pit sites might preclude complete avoidance of sensitive biological resources. Therefore, if avoidance is not feasible, the following will be implemented:
- If a high value vegetation type will be unavoidably impacted by project construction, the vegetation and associated topsoil will be removed, salvaged or mulched, and stockpiled separately. Following the completion of project construction, the stockpiled topsoil will be replaced and stockpiled vegetation will be replanted (or replaced if mulched) on the site of origin or on another adjacent location as appropriate, under the direction of a qualified biologist. Retention and reapplication of stockpiled topsoil and vegetation will be supplemented with onsite restoration and/or rehabilitation of the same vegetation type at a ratio of 1:1, as appropriate and biologically feasible; or

- If post-construction restoration and/or rehabilitation locations cannot be identified on-site, then appropriate and biologically feasible locations identified within other component sites shall be expanded to accommodate additional restoration to meet the 1:1 ratio; or

- If appropriate and biologically feasible restoration and/or rehabilitation for the impacted high value vegetation type cannot cumulatively be identified within the project component sites, and conditions on the site(s) are appropriate and biologically feasible for a different high-value vegetation type on the site, restoration and/or rehabilitation of this vegetation type may be substituted at a ratio of 1:1.

- The post-construction native vegetation restoration will be conducted under the direction of a qualified biologist. Where possible, restoration and/or rehabilitation will be consistent with, or a supplemental to, any approved Reclamation Plan approved for any of these component sites.

- If wetland or riparian vegetation within the waters of the United States will be unavoidably impacted by project construction, USACE will be consulted regarding permits required under Clean Water Act Section 404. All necessary federal and state approvals (including coordination with CDFG and additional CEQA review) will be obtained prior to the implementation of construction activities.

Although no mitigation is recommended, a potential project-related benefit to wildlife movement and reduction of habitat fragmentation may occur as a result of the following measure:

- Project-related native habitat restoration and/or rehabilitation within the Tujunga Wash Diversion and the LADWP Power Line easement may support wildlife movement through the project area.

Mitigation for potential impacts to Special Status plants at sites to which access was not granted (i.e., Vulcan Gravel, Sheldon Pit, Cal Mat Pit, and Strathern Pit) shall consist of the following measures:

- Prior to construction of Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit components, onsite field surveys will be conducted at the appropriate time of the year (approximately mid-April to mid-June) to confirm the potential for special status plant and wildlife species to occur on these sites:

- Plants. southern tarplant, San Fernando Valley spineflower, slender-horned spineflower, Los Angeles sunflower, Nevin's barberry, Plummer's mariposa lily, mesa horkelia, and Davidson's bush mallow

- If the potential is confirmed for one or more special status species to occur, a qualified biologist will conduct focused surveys for those species in accordance with appropriate survey protocols at the appropriate time of the year. If any special status species are identified during the focused surveys, the proposed facilities will be designed and/or sited to avoid or minimize disturbance and loss of the species during construction. However, depending on the location of sensitive resources at the sites, if any, project redesign that avoids the biological resources while still meeting the flood control objective of the project component may be infeasible. Therefore, if avoidance is not feasible, restoration and/or rehabilitation as described vegetation types will be implemented.

- Additionally, if impacts on a federal or state-listed threatened or endangered species cannot be avoided, USFWS and/or CDFG will be consulted regarding permits required under FESA and/or CESA. All necessary federal and state approvals shall be obtained prior to the implementation of construction activities that would impact a federal or state-listed threatened or endangered species.

Mitigation for potential impacts to special status plants at the vacant lot on Wentworth shall consist of the following measures:

- A qualified biologist will conduct focused surveys at New Park on Wentworth for the following special status plant and wildlife species at the appropriate time of the year (approximately mid-April to mid-June) in accordance with appropriate survey protocols :

- <u>Plants.</u> southern tarplant, San Fernando Valley spineflower, slender-horned spineflower, Nevin's barberry, Plummer's mariposa lily, mesa horkelia, and Davidson's bush mallow

- If any special status species are identified, the proposed facilities will be designed and/or sited to avoid or minimize disturbance and loss of the species during construction. However, depending on the location of sensitive resources at the sites, if any, project redesign that avoids the biological resources while still meeting the flood control objective of the project component may be infeasible. Therefore, if avoidance is not feasible, restoration and/or rehabilitation as described vegetation types will be implemented.

- Additionally, if impacts on a federal or state-listed threatened or endangered species cannot be avoided, USFWS and/or CDFG will be consulted regarding permits required under FESA and/or CESA. All necessary federal and state approvals will be obtained prior to the implementation of construction activities that would impact a federal or state-listed threatened or endangered species and the project will be constructed, operated, and maintained in conformance with the terms and conditions of these approvals.

Mitigation for potential impacts to special status wildlife at sites to which access was not granted (i.e., Vulcan Gravel, Sheldon Pit, Cal Mat Pit, and Strathern Pit) shall consist of the following measures:

- Prior to construction of Vulcan Gravel Processing Plant, Sheldon Pit, Cal Mat Pit, and Strathern Pit components, onsite field surveys will be conducted at the appropriate time of the year (approximately mid-April to mid-June) to confirm the potential for special status plant and wildlife species to occur on these sites:

- <u>Wildlife.</u> silvery legless lizard and southwestern pond turtle, orange-throated whiptail, San Diego horned lizard, and least Bell's vireo.

- If the potential is confirmed for one or more special status species to occur, a qualified biologist will conduct focused surveys for those species in accordance with appropriate survey protocols at the appropriate time of the year. If any special status species are identified during the focused surveys, the proposed facilities will be designed and/or sited to avoid or minimize disturbance and loss of the species during construction.

However, depending on the location of sensitive resources at the sites, if any, project redesign that avoids the biological resources while still meeting the flood control objective of the project component may be infeasible. Therefore, if avoidance is not feasible, restoration and/or rehabilitation as described vegetation types will be implemented.

- Additionally, if impacts on a federal or state-listed threatened or endangered species cannot be avoided, USFWS and/or CDFG will be consulted regarding permits required under FESA and/or CESA. All necessary federal and state approvals shall be obtained prior to the implementation of construction activities that would impact a federal or state-listed threatened or endangered species.

Mitigation for potential impacts to special status wildlife at the vacant lot on Wentworth shall consist of the following measures:

- A qualified biologist will conduct focused surveys at New Park on Wentworth for the following special status plant and wildlife species at the appropriate time of the year (approximately mid-April to mid-June) in accordance with appropriate survey protocols:

- <u>Wildlife.</u> silvery legless lizard, orange-throated whiptail, and San Diego horned lizard

- If any special status species are identified, the proposed facilities will be designed and/or sited to avoid or minimize disturbance and loss of the species during construction. However, depending on the location of sensitive resources at the sites, if any, project redesign that avoids the biological resources while still meeting the flood control objective of the project component may be infeasible. Therefore, if avoidance is not feasible, restoration and/or rehabilitation as described vegetation types will be implemented.

- Additionally, if impacts on a federal or state-listed threatened or endangered species cannot be avoided, USFWS and/or CDFG will be consulted regarding permits required under FESA and/or CESA. All necessary federal and state approvals will be obtained prior to the implementation of construction activities that would impact a federal or state-listed threatened or endangered species and the project will be constructed, operated, and maintained in conformance with the terms and conditions of these approvals.

<u>Operation Impacts</u>

Operation and maintenance requirements and implementation protocols shall be developed for all individual project components for inclusion within the project description of permits, or other entitlement applications. To this end, operation and maintenance activities shall be implemented in a manner consistent with the terms and conditions of project approvals and/or permits.

6.0 LEVEL OF SIGNIFICANCE AFTER INCORPORATION OF MITIGATION

In the absence of impacts to special status plant or wildlife species, all project-related impacts are either "less than significant" or can be mitigated to "less than significant" at all sites. However, if subsequent focused surveys at Vulcan Gravel, the vacant lot on Wentworth, Sheldon Pit, Cal Mat Pit, and/or Strathern Pit determine that impacts to special status plant or wildlife species would occur from project implementation, then mitigation measures shall be implemented to reduce any such impacts to less than significant levels.

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Appendix E
Cultural Resources Technical Report

Appendix E contains the Cultural Resources Technical Report completed for the proposed project by Greenwood and Associates (2003).

ARCHAEOLOGICAL SURVEY FOR

Sun Valley Watershed Management Plan

County of Los Angeles, California

Prepared for:
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October 16, 2003

Abstract

An archaeological survey was conducted for the Los Angeles County Department of Public Works for the proposed Sun Valley Watershed Management Plan Project in the community of Sun Valley. The project calls for the construction of multiple facilities and features. The record search for the project area was negative for known archaeological sites, but most of the project locations have never been surveyed. However, background research indicates that the area was built up in the 1880s and could contain both artifact deposits and buried architectural features. The reconnaissance of the parcels did not result in the identification of any archaeological resources due to lack of visibility or access.

No prehistoric or historical artifacts or features were observed. Although the surveys were constrained by the lack of ground surface visibility, the probability of encountering cultural materials is considered high in some locations and low in others.

Recommendations for historical research are made for the high sensitivity areas to determine the nature and types of materials that might be present and to develop the context for evaluating the potentially eligible resources, e.g., machinery, refuse, or structures at the gravel pits. The gravel pits date to the 1890s and were instrumental in development of the Los Angeles Harbor breakwater and other significant construction projects.

Information Center:
USGS Quadrangles: San Fernando, Sunland, Van Nuys, Burbank
Acreage: 2,681 acre project area and 250 acres surveyed
Cultural Resources: Possible
Type of Investigation: Archaeological Survey and Literature Search

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Introduction

At the request of Ms. Sarah Garber, of Montgomery Watson Harza, Pasadena, Greenwood and Associates has conducted a cultural resource survey for the proposed Sun Valley Watershed Management Plan. The project is in the community of Sun Valley in the County of Los Angeles (Figure 1).

This study was prepared in order to identify cultural resources within the proposed impact areas, and make preliminary recommendations regarding the potential significance of archaeological properties according to CEQA guidelines (2002).

These efforts included a review of available archaeological site archives, historical maps, documents describing the proposed project area, and a pedestrian survey of the project locations. This report describes the results of the background research, methods and results of the field investigation, and conclusions regarding the probability of impact to cultural resources by virtue of project-related activities.

Cultural Background

The following summary of knowledge is based on the literature search conducted for the Sun Valley Watershed Management Plan. It is designed both to indicate the potential for the presence of cultural resources within the project area, and to provide a context for any cultural data that may be present within the study area.

Prehistoric

The archaeological record indicates that sedentary populations occupied the coastal and inland regions of California more than 9,000 years ago. Early periods were characterized by processing of hard seeds with the mano and milling stone and the use of the atlatl (dart thrower) to bring down large game, e.g., deer. Villages in the San Fernando Valley were typically around permanent water sources that allowed exploitation of a variety of different habitats for food. Major villages have been excavated in the Sun Valley area near Tujunga Wash and at least one dates to 2000 B.C. (Knight 2002:8). In the later periods, prior to the arrival of Europeans, the bow and arrow was in use, beads were being used as money, and the mortar and pestle were used to process acorns.

Based on their association with the Spanish missionary establishment of San Gabriel Archangel, the Native American people described as inhabiting the region surrounding the project area are known as Gabrielino. These people were hunters and gatherers with permanent villages, specialized processing sites, formal cemeteries, and trade networks with local and non-local groups. It is believed that

Figure 1. Vicinity Map.

initially they practiced a seasonal strategy, moving from location to location exploiting various food resources, but with technological advances they were able to maintain permanent year round villages with reliance on acorns and marine resources. At the time of European contact, these people occupied an area that included the watersheds of the Los Angeles, San Gabriel, and Santa Ana Rivers, the Los Angeles Basin, the coast from Orange County's Aliso Creek north to Topanga Canyon, and the Channel Islands of Santa Catalina, San Clemente, and San Nicholas (Bean and Smith 1978; Kroeber 1953; McCawley 1996). Several chronological frameworks have been developed for the Gabrielino region including those by Wallace (1955) and Warren (1968), and later McCawley (1996).

Historic

During the historic period, the area was settled with the creation of the Spanish and Mexican land grants. The project area is located within the lands allotted to Mission San Fernando which were then sold off as the Ex-Mission San Fernando grant. The study area is within the eastern edge of the original grant. Mexico became independent of Spain in 1821 and all mission lands were secularized in 1832-1835. The eastern San Fernando Valley was sold to Eulogio de Célis for $14,000.00. It was during this period that Rancho Tujunga (within encompasses most of the study area) was granted to the brothers Pedro and Francisco Lopez. After the Mexican-American War of 1846-1848, California passed into the hands of the United States with the signing of the Treaty of Guadalupe-Hidalgo in 1848. Rancho Tujunga was divided and sold many times over, and during the 1870s the area was quickly developing. By 1891, the Sun Valley area was well known for its vineyards and orchards, row crops, and wheat (Knight 2002:12).

The Sun Valley area is covered with alluvium from the San Gabriel Mountains created by storms and run-off. These conditions were responsible for the vast areas of rock and gravel. By the turn of the century, the City of Los Angeles was seeking suitable rock material for the Los Angeles Harbor and began to purchase large quantities of stone from the Tujunga Wash. In the early 1900s, railroad spurs had been extended into the main channels of the wash to load rock and gravel. By the 1930s, the City of Los Angeles had annexed the project area and development and populations continued to increase (Knight 2002:15).

The background information indicates that the project area was the scene of human occupation from at least 2000 B.C. to the present. The area has a rich variety of archaeological sites as well as a long historical record including its gravel pits and stone houses (Knight 2002).

Project Locations and Descriptions

1. Cal Mat Pit

Existing Setting

Cal Mat Pit occupies a site bounded by Glenoaks Boulevard on the southwest, Wentworth Street on the northwest, Peoria Street on the southeast, and Dronfield Avenue on the northeast. Cal Mat Pit was an active gravel pit until the late 1980s. Since then it has been used as a landfill for inert construction debris including concrete, asphalt, rock, dirt and brick. Vulcan Materials Company (Vulcan) owns and operates Cal Mat Pit. The entire pit area is approximately 90 acres.

The project proposes to use the approximately 30-acre area on the northeastern corner of the property, which was previously used as a disposal site for gravel wash water. This area is separated by a berm from the active landfill operations in the southern portion of the pit, and is currently not used for landfilling or other operations. The area is vegetated year-round and water ponds in this area during the rainy season. According to conversations with Vulcan management, a small portion of the 30-acre area (the southern corner of Wicks Street and Dronfield Avenue) was not used for gravel excavation, landfill, or wash water deposition, and contains natural soils.

Surrounding land uses to the northeast include single-family residential and residential with equestrian uses. Stonehurst Recreation Center is adjacent to the site, located between Allegheny Street and Wicks Street. Stonehurst Elementary School is located one block to the northeast. Sheldon Pit, an exhausted gravel pit currently used for gravel wash water disposal, is located to the northwest, across Wentworth Street. Bradley Landfill is located to the southwest across Glenoaks Boulevard.

Project Description

The 30-acre area on the northeastern portion of Cal Mat Pit (project site) would be used as a surface storm water retention area. The project would be implemented in three phases: Phase 1, Interim Phase, and Phase 2.

During Phase 1, the project site would be converted into a storm water retention area, consisting of a 15-acre detention basin and a 5-acre infiltration basin. Berms approximately 15 feet high would be constructed to separate the retention area from the active landfill area to the south and to separate the two proposed basins. A storm water inlet, a set of eight catch basins, and an underground pipeline would be installed in the surrounding streets to collect and convey storm water into the retention area. The retention area would temporarily store and then infiltrate the storm water.

The area around the basins would be landscaped with low maintenance and drought tolerant vegetation. Public access to the site is not proposed during Phase 1. An irrigation system would be installed to use a portion of the collected storm water to irrigate the proposed landscaped areas. Operation of the Phase 1 retention area is expected to continue for 3 years.

During the Interim Phase, the project site would be operated as a landfill for inert construction debris, accepting materials similar to those used in the ongoing landfilling operation in the southern portion of the pit. The project site would continue to serve as a flood control facility, collecting and infiltrating storm water through standpipes (vertical pipes) that would be inserted into the landfill material. The berms constructed in Phase 1 and the standpipes would be raised gradually to allow for storm water storage above the landfill's surface.

Landfilling operations and concurrent raising of the berms and addition of standpipe sections would continue until the bottom of the retention area is filled to approximately 30 feet below street level. The interim phase would last for approximately 5 years.

In Phase 2, landfilling of the site would be discontinued, and the project site would be converted into a 30-acre public park with a lake and an island. Two sets of four catch basins, a storm drain inlet, and underground pipelines would be installed in the surrounding streets to convey additional storm water from the surrounding areas into the retention area. A portion of the project site would be lined with clay so that the storm water entering the area would pond and create a permanent lake. The lake would provide storm water storage both above the lake's normal surface and below the lake through the standpipes.

Recreational facilities proposed for the park include trails, open areas for picnicking and sports, and non-motorized boating and other water sports. Improvements to the new park area would include landscaping, tree planting, and native plant garden to provide recreation, wildlife habitat, environmental education, and aesthetic values. Part of the collected storm water would be used to irrigate the proposed plantings. The new park area may be connected to the adjacent Stonehurst Recreation Center and Park.

2. New Park on Wentworth

Existing Setting

This project would utilize an undeveloped parcel on the northwestern corner of the area bounded by Wentworth Street, Wealtha Avenue, Sheldon Street, and Stonehurst Avenue. The vacant parcel is partially fenced on the perimeter, and has scattered vegetation throughout. Surrounding land uses to the east are residential with some horse keeping. The Hansen Dam Golf Course and Sheldon Pit are west across Wentworth Street.

Project Description

The project proposes to convert the vacant parcel into a new park. Approximately 3 acres or 20 percent of the area would be excavated to create a shallow depression. The depressed area would be surfaced with grass or other vegetation and used as a field under normal conditions. During storms, the field would be used to collect and infiltrate storm water. The average depth of the depressed area would be 2 feet. Catch basins and pipelines would be installed in the surrounding streets to convey storm water from the surrounding areas into the new park.

3. Onsite Best Management Practices (BMPs)

Best Management Practices (BMPs) are techniques and methods that manage stormwater by reducing runoff and promoting onsite infiltration. They are generally small-scale and localized in comparison to regional flood control facilities. A wide variety of BMPs are available, including backyard cisterns and dry wells, use of porous pavement, and education. Elements of the plan involve BMPs at various residential, commercial, and industrial parcels throughout the watershed, as well as along public right-of-ways such as street medians and freeway embankments. Participation in the use of these onsite BMPs would be voluntary; therefore, locations of onsite BMPs cannot be determined at this time.

4. Tree Planting and Mulching

They are generally small-scale and localized in comparison to regional flood control facilities. A wide variety of BMPs are available, including mulching and tree planting. Elements of the plan involve BMPs at various residential, commercial, and industrial parcels throughout the watershed, as well as along public right-of-ways such as street medians and freeway embankments. Participation in the use of these onsite BMPs would be voluntary; therefore, locations of onsite BMPs cannot be determined at this time.

5. Parking Lot on Sherman Way

Existing Setting

This project component uses the commercial compound located on Sherman Way. The property is bounded by Sherman Way to the north, Vineland Avenue to the east, Tujunga Avenue to the west, and a Burbank Airport property to the south. The property contains various commercial buildings and parking spaces located around the buildings.

Surrounding land uses include Burbank Airport to the east across Vineland Avenue, Sun Valley Middle School and residential uses to the north across Sherman Way, commercial/industrial uses to the west, and the Burbank Airport property to the south. The airport property contains various equipment and facilities used for communication and navigation.

Project Description

This project would involve installation of underground tanks to store and infiltrate storm water beneath the existing parking areas around the commercial buildings. The pavement would be removed for construction but would be restored after installation of the tanks, and no change in the number of parking spaces is proposed. Trees may be planted between the stalls. Catch basins would be installed in the surrounding streets to collect and convey storm water to the proposed tanks.

6. Power Line Easement

Existing Setting

A Los Angeles Department of Water and Power (LADWP) power line easement passes through the southern end of the Sun Valley Watershed along Whitnall Highway. The easement width is approximately 300 feet, and the spacing between the power line towers is approximately 700 to 850 feet. Surrounding land use along the power line is primarily residential.

Project Description

The project proposes to construct a series of underground storage tanks within the easement between the power line towers to collect storm water. The open spaces between the towers allow for construction of 600 by 250 foot storage tanks. The proposed project involves use of the power line easement between Clybourn Avenue and Tujunga Avenue. Collected stormwater would be infiltrated or reused. Catch basins and a pipeline would be constructed in Oxnard Street to direct runoff to the storage tanks. A maximum of seven tanks may be constructed within the easement.

The surface areas above the tanks may be used for passive recreation, such as community gardens, picnic areas, or other open space uses. The surface could also be planted to provide habitat for local terrestrial and bird species.

7. Roscoe Elementary School

Existing Setting

Roscoe Elementary School is located on Strathern Street, bounded by San Fernando Road and White Street. It is located within District B of the LAUSD system, and serves approximately 1,200 students from grades K through 5. The

Metrolink railroad is located along San Fernando Road to the northeast of the school property. Surrounding land uses include medium- and low-density residential and commercial properties.

Project Description

The proposed project would install underground tanks for storm water storage and infiltration beneath the school's playground, parking lot, and other open space areas. Approximately 1.5 acres (60 percent of the total open space) would be used to install the underground tanks. Existing pavement or grass surfaces would be removed for construction, but all surfaces would be restored to the original condition or improved with landscaping once the tanks have been installed.

8. Sheldon Pit and Tujunga Wash Diversion

Existing Setting

Sheldon Pit is an exhausted gravel extraction pit owned by Vulcan Materials Company. It is located at the north end of the watershed, bounded by Wentworth Street to the east, Glenoaks Boulevard to the southwest, Tujunga Wash to the northwest, and Hansen Dam Golf Course to the north. Hansen Spreading Grounds is located to the west across Tujunga Wash. It is currently used by the Los Angeles County Department of Public Works to recharge the groundwater basin using some of the flows from Tujunga Wash.

The surface area of the site is approximately 138 acres, and the maximum depth is about 160 feet. In the southern portion, the pit has been excavated to a level where groundwater is exposed. Sheldon Pit is used as a source and disposal location for gravel wash water for the Vulcan Gravel Processing Plant. Exposed groundwater is pumped out of Sheldon Pit and used for gravel washing operations at the processing plant. The resulting wash water, which contains silts and other fine materials, is pumped back to Sheldon Pit for disposal.

Project Description

This project proposes to convert the existing landfill area to a surface storm water retention and treatment area. In addition to capturing storm water from surrounding areas, Sheldon Pit would be used to store and infiltrate some of the flows of Tujunga Wash to augment the groundwater recharge capacity of Hansen Spreading Grounds.

In order to capture and infiltrate storm water and flows from Tujunga Wash, approximately half of Sheldon Pit would be modified to create the following four areas: 1) Storm Water Retention, 2) Transfer Retention, 3) Treatment Wetland, and 4) Infiltration Basin.

To convey storm water into the Storm Water Retention area, catch basins and underground pipelines would be installed in the surrounding streets. The collected storm water would be transferred from the Storm Water Retention area to the Treatment Wetland area, where some of the pollutants are removed. After circulating through the Treatment Wetland, the water would be deposited into groundwater in the Infiltration Basin portion of the pit.

To divert flows from Tujunga Wash into the Transfer Retention area, a section of the Tujunga Wash's concrete channel bottom would be lowered by approximately 10 feet to capture a portion of the storm flows. Captured flows would be diverted into the proposed Transfer Retention area within Sheldon Pit through a 4-foot high by 7-foot wide reinforced concrete box culvert, fitted with a slide gate to control diversions. Water diverted from Tujunga Wash would be transferred from the Transfer Retention area into the Infiltration Basin area to recharge the groundwater.

The portions of the pit around the proposed retention basins could be used for passive and active recreation. New recreational facilities could be linked with the nearby Hansen Golf Course. The retention areas and the surrounding areas could also be used to provide wetland and terrestrial habitat.

9. Stonehurst Elementary School

Existing Setting

Stonehurst Elementary School is located on Stonehurst Avenue between Fenway Street and Art Street. It is located within District B of the LAUSD system, and serves approximately 350 students from grades K through 5. The school property includes school buildings, a playground, garden areas, auditorium, and a parking lot. The school is surrounded by single-family residences. Stonehurst Recreation Center and Park is located a few blocks to the west, and Cal Mat Pit is a block to the southwest.

Project Description

The proposed project would install underground tanks for storm water storage and infiltration beneath the school's playground, parking lot, and other open space areas. Approximately 1.7 acres (60 percent of the total open space) would be used to install the underground tanks. Existing pavement or grass surfaces would be removed for construction, but all surfaces would be restored to the original condition or improved with landscaping once the tanks have been installed.

10. Stonehurst Park

Existing Setting

Stonehurst Recreation Center and Park is a City of Los Angeles park located on Dronfield Avenue between Allegheny Street and Wicks Street. Facilities include a playground, baseball field, picnic and barbecue area, a recreation center building for indoor activities, and open lawn areas for additional picnicking, soccer, softball, and other large group activities. Surrounding land use to the northeast and northwest is single-family residential. Wicks Street to the southeast separates the park from Cal Mat Pit.

Project Description

The proposed project would involve modification of the park's field area to capture and infiltrate storm water. Approximately 3 acres (20 percent of the park) would be excavated to create a shallow depression with an average depth of 2 feet. Once construction is complete, the surface would be restored to its original state. Catch basins and pipelines would be installed in the surrounding streets to direct storm water from the surrounding residential areas into the field area. During large storms, water would pond in the depressed field area and ultimately infiltrate into the ground.

11. Storm Drains

In addition to the proposed facilities and improvements described above, the project would require installation of storm drains of various sizes within existing roadways. Some of these storm drains would be used to collect and convey storm water from the street surfaces to the proposed retention facilities described above. Some drains may be connected to existing storm drains located at the southern portion of the watershed. During construction, existing pavement of the affected roadways would be removed. Once construction is complete, the roadways would be repaved and restored to their original conditions.

12. Strathern Pit

Existing Setting

Strathern Pit is an exhausted gravel pit currently used as a landfill for inert materials. It is owned and operated by LA Byproducts. The site is about 30 acres on the northeast corner of Strathern Street and Tujunga Avenue. The pit currently has a maximum depth of approximately 80 feet.

Surrounding land uses to the east and south are primarily residential. Sun Valley Park, a City of Los Angeles park, is located to the east across Fair Avenue. Another gravel pit is located to the west across Tujunga Avenue.

Project Description

This project proposes to convert the existing landfill into a surface storm water retention and treatment area. The existing landfill surface would be modified to create terraced side slopes. Once project construction is complete, the deepest part of the pit would be approximately 50 feet below street level. The bottom portion of the basin would be operated as a wetland with permanent standing water. The area above the wetland would provide storm water storage capacity during large storms. Storm water captured in the basin would be circulated through the wetland, which would be designed to remove some of the pollutants.

After circulating through the wetland, the water would be transferred offsite for reuse or infiltration. The basin would be lined with impervious material, and no onsite infiltration of storm water would occur at this site.

The reuse option would require a 4,800-foot pipeline and a 150-hp pump to transport the water to Vulcan Gravel Processing Plant, where the water would be used for gravel washing. The infiltration option would require a 14,000-foot long pipeline and a 100- to 150-horsepower pump to transport the water to the Tujunga Spreading Grounds, where the water would be used for groundwater recharge.

13. Street Storage

This project component involves installation of underground tanks to store and infiltrate storm water within existing roadways. This element is proposed in the lower half of the watershed, defined as the area below the intersection of Interstate 5, Tuxford Street, and San Fernando Road. Street surfaces would be repaved to original condition once project construction has been completed.

14. Sun Valley Middle School

Existing Setting

Sun Valley Middle School is located on Bakman Avenue and is bounded by Sherman Way on the south, Fair Avenue on the east, and Valerio Street on the north. It is located within District B of the LAUSD system, and serves approximately 2,600 students from grades 6 through 8. The school property includes permanent and temporary school buildings, a grass playing field, paved basketball/volleyball courts, a parking lot, and a wooded area in the southeast corner of the site. A grassy area known as the Quad is located in the northwestern portion of the site, and is enclosed on three sides by the administration building, library, and cafeteria. The wooded area will be developed into a community healthcare facility in a separate project being implemented by the County of Los Angeles.

A school bus yard is located on the southwestern corner of the property. Surrounding land uses to the east, north, and west are residential, and commercial properties are located to the south across from Sherman Way. The runway of Burbank Airport is located approximately 0.5 mile to the east.

Project Description

The pilot project proposes to use the school's sports field, staff parking lot, and Quad area.

The sports field (the grass playing field and the paved basketball/volleyball courts) would be modified to create a shallow depression for collecting storm water. The 4.3-acre sports field would be excavated and graded to create a surface that slopes from the existing grade at the northwest corner to four feet below existing grade at the southeast corner, at a rate of one percent. Once excavation is complete, the existing paved area would be repaved and the field resodded.

Two catch basins and a storm water inlet would be installed in the surrounding streets to convey storm water into the sports field. A retaining wall would be installed around the east and south edges of the field with a maximum height of four feet to contain water in the sports field.

Five 10,000-gallon underground storage tanks would be installed below the sports field. Each tank would be approximately 6 feet in diameter and 50 feet long. A trench drain and a pipe system would be installed to direct the storm water collected on the field surface into the storage tanks below. A horizontal perforated pipe system would be installed underneath the storage tanks. When the storage tanks are full, the excess storm water would infiltrate into the ground below through the perforated pipes.

Some of the storm water collected in the storage tanks under the sports field would be reused for onsite irrigation. A sump pump would be installed in the storage tank area to feed the proposed irrigation system, which would provide water for the playing field, Quad, staff parking, and other landscaped areas. A number of trees would be planted around the school buildings to provide shade and visual improvements for the campus.

The staff parking lot would be modified to collect and infiltrate storm water through dry wells. A planter would be installed at the north row of the parking lot between the curbs of the existing parking stalls. The dimensions of the planter would be 5.5 feet by 390 feet. Approximately 22 dry wells (19 feet deep) would be installed within the planter. The surface openings of the dry wells would be encircled with a grassy swale area. Runoff from the west side of the school and the parking area would be channeled into the planter area and percolate into the ground through the dry wells.

The Quad area would be excavated and depressed to a depth of 2 feet to collect storm water from the roof tops of the surrounding buildings. Five dry wells, similar to those proposed in the staff parking lot, would be installed in the depressed Quad area to infiltrate the collected storm water.

15. Tuxford Green

Existing Setting

The proposed site for this pilot project is the triangular area bounded by Tuxford Street on the west, San Fernando Road on the north, and Interstate 5 (Golden State Freeway) on the south. The site, named "Tuxford Green" for the purpose of the Watershed Management Plan, is a vacant parcel approximately 1 acre in area owned by the City of Los Angeles. The site consists of two portions: the western portion with a bare soil surface and the eastern portion with a concrete surface. The eastern portion is adjacent to and serves as the entry way for a box culvert, which consists of seven 6.5-foot wide by 2.5-foot high concrete culverts arranged side-by-side. During storms, the box culvert channels runoff collected at the Tuxford-San Fernando intersection area, passes it under I-5, and discharges it on the south side to the north end of Tujunga Avenue.

The Tuxford-San Fernando intersection is the lowest point (sump) in the upper half of Sun Valley Watershed. Despite the existing box culvert, the roadways at this intersection flood even in minor storm events because of the sump condition and the fact that runoff is conveyed to the box culvert by surface cross gutters in the street. As a result of frequent and severe flooding problems, the intersection has become a symbol of the flooding problem in the Sun Valley area.

The Vulcan Gravel Processing Plant is located on the opposite corner (north) of the intersection from the project site. The east and west corners of the intersection are occupied by commercial and industrial facilities. MTA bus stops are located near the intersection, one each on the western and eastern corners and facing San Fernando Road. The Metrolink railroad is located along San Fernando Road on the northeastern side, between North San Fernando Road and San Fernando Road.

Project Description

This project component consists of two phases. Phase 1 involves installation of underground storage tanks on the southern corner of Tuxford-San Fernando intersection (Tuxford Green) for storm water storage. The three tanks would have a combined total storage capacity of 330,000 gallons. Catch basins and underground pipelines would be constructed within Tuxford Street and San Fernando Road near the intersection to capture and convey storm water to the storage tanks. Water in excess of the tanks' storage capacity would exit the tanks through overflow pipes into the existing box culverts under Interstate 5.

In Phase 2 of the pilot project, additional catch basins would be installed on San Fernando Road, Glenoaks Boulevard, and Tuxford Street to capture additional storm water runoff. Underground pipelines would be constructed along San Fernando Road, Tuxford Street, and along Glenoaks Boulevard to convey the water from the catch basins to the storage tanks installed in Phase 1.

The surface area above the tanks would be landscaped, and a demonstration garden with native plants and signage would be created to improve the aesthetic appeal of the area and provide opportunities for community education on water and flood control issues. It is proposed that local river rocks, which are used in historic buildings in Sun Valley's downtown area, be used to surface retaining walls and exposed concrete surfaces. An irrigation system would be installed to reuse some of the collected storm water for irrigating the new landscaped areas. In addition, the MTA bus stop located at the intersection could be relocated to the Tuxford Green site, providing a more comfortable waiting environment for the bus riders.

16. Valley Steam Plant

Existing Setting

Valley Steam Plant is located at 11801 Sheldon Street. The facility is bounded by Glenoaks Boulevard to the northeast, Sheldon Street to the southeast, San Fernando Road to the southwest, and the Tujunga Wash to the northwest. The entire plant site is approximately 155 acres. The plant consists of the following areas: 1) a natural gas power generating facility (currently under construction); 2) parking lot and maintenance yard area; 3) cooling towers, existing steam plant and transformers; 4) an exhausted gravel pit; and 5) a tank farm consisting of six oil tanks (each with 7 million gallon capacity) and surrounding berms.

The land use surrounding the facility is primarily commercial and industrial. The Hansen Spreading Grounds is located to the northwest across Tujunga Wash. Metrolink's Antelope Valley Line parallels San Fernando Road to the southwest of the site. Boulevard Pit, an active gravel pit, is located to the west across San Fernando Road. Other uses located nearby on San Fernando Road include an emergency medical clinic, a hospital, two motels, and other commercial and light industrial uses. Surrounding land uses on Sheldon Street and Glenoaks Boulevard are primarily industrial. Bradley Landfill is located to the southeast across Sheldon Street. The closest residential property is located approximately one-half mile north of the facility.

Project Description

Two surface retention areas would be constructed on the southern portion of the plant property to capture and infiltrate storm water collected from the plant and the surrounding commercial/industrial areas.

In Phase 1, a 3.5-acre surface infiltration basin would be constructed. Four catch basins and a pipeline would be installed on the plant property to convey storm water to the infiltration basin, where water would percolate into groundwater. The area around the basin would be landscaped to provide a recreation/lunch area for the plant employees.

In Phase 2, a 6-acre retention area, comprised of a detention basin and an infiltration basin, would be constructed near the Phase 1 basin. Additional catch basins and a pipeline would be installed in the surrounding streets to collect and convey storm water from the surrounding streets into the Phase 2 retention area. During smaller storms, all of the storm water would percolate to groundwater through the bottom of the infiltration basin. During large storms, some of the stormwater would be transported from the Phase 2 retention area to the existing tank farm. The excess storm water would be stored temporarily using four of the six former oil tanks and the bermed area surrounding the tanks, as necessary. Two 3,500 gallons per minute pumps and a pipeline would be installed on the plant property for transporting water from the retention area to the tank farm. Once the storm has passed, the water stored in the tank farm area can be returned to the infiltration basin by gravity through the same pipeline or can be transferred for reuse.

The Phase 2 retention area would be landscaped and modified to provide additional employee lunch/recreation areas. A native and drought tolerant garden with interpretive signage and identification of plants could be created to provide environmental education opportunities. The Phase 2 detention basin may be used to provide approximately 3 acres of wetland habitat. A portion of the collected storm water would be used to irrigate the proposed landscaping and plantings.

Both Phase 1 and Phase 2 basins need to be sited to avoid power line bases and other non-movable objects located on the plant property. Therefore, the proposed locations and shapes of the basins may be somewhat modified. Prior to Phase 2 construction, the abandoned railroad tracks located in the Phase 2 retention area would be removed.

17. Vulcan Gravel Processing Plant

Existing Setting

The Vulcan Materials Company (Vulcan) Gravel Processing Plant is located just north of the intersection of Tuxford Street and San Fernando Road. The 53-acre plant is bounded by Tuxford Street and Bradley Avenue to the east and by San Fernando Road and Bradley Landfill to the northwest. The plant is comprised of gravel processing facilities and paved open space areas in the southeast, and unpaved dirt and stockpiles in the northwest.

Surrounding land uses include Bradley Landfill to the northwest, commercial and industrial facilities to the west and east, and Interstate 5 to the south. The Tuxford Green pilot project is located on the opposite corner of the Tuxford-San Fernando intersection. The Metrolink railroad is located between North San Fernando Road and San Fernando Road and is adjacent to the southwestern margin of the plant.

Project Description

The proposed project involves construction of a surface retention area on the plant property to capture and infiltrate storm water. The 6-acre retention area would consist of a detention basin and an infiltration basin with a surrounding berm. To channel storm water into the retention area, the site may be graded to convey runoff by sheet flow, or an underground catch basin and pipeline system may be installed. A 10-horsepower sump pump and pipeline is proposed to convey some of the collected storm water to the existing 500,000-gallon storage tank from the retention area. The stored storm water may be reused on site for gravel washing operations. No landscaping is proposed at this site.

Literature and Archival Review

A review of available literature, archaeological site archives, and relevant historical maps was conducted at the South Central Coastal Information Center on January 21, 2003 by Alice Hale, M.A., of Greenwood and Associates. There are three boundaries considered in this investigation. The first are the areas of effect which consist of the various project components, the second is the watershed boundary which encompasses a larger geographic area, and the third is the 0.5 mile record search boundary around the watershed boundary (Figure 2).

Prehistoric sites in impact areas: None

Historical resources in impact areas: 1

Cultural-Historic Monument LA 172 (Area 5):	Stonehurst Recreation Center Bldg., 9901 Dronfield Ave., Sun Valley. Native stone construction, ca. 1930. Declared March 9, 1977.

Surveys in impact areas: 4

Prehistoric sites in watershed area: None

Historical resources in watershed area: None

Surveys in watershed area: 11

Prehistoric sites in search area: None

Historical resources in 0.5-mile radius outside of watershed: 4+

LAN-2087H:	Three loci of glass fragments, 1943-1949
LAN-2088H:	Remains of Consumers Rock and Gravel Co., 1920s-1930s
State Historic Landmark 939:	Original location of Old Trapper's Lodge, 10340 Keswick Ave. at San Fernando Rd, Sun Valley. Twentieth Century folk art, 1951-1981 (now at Pierce College, 6201 Winnetka Ave., Woodland Hills).

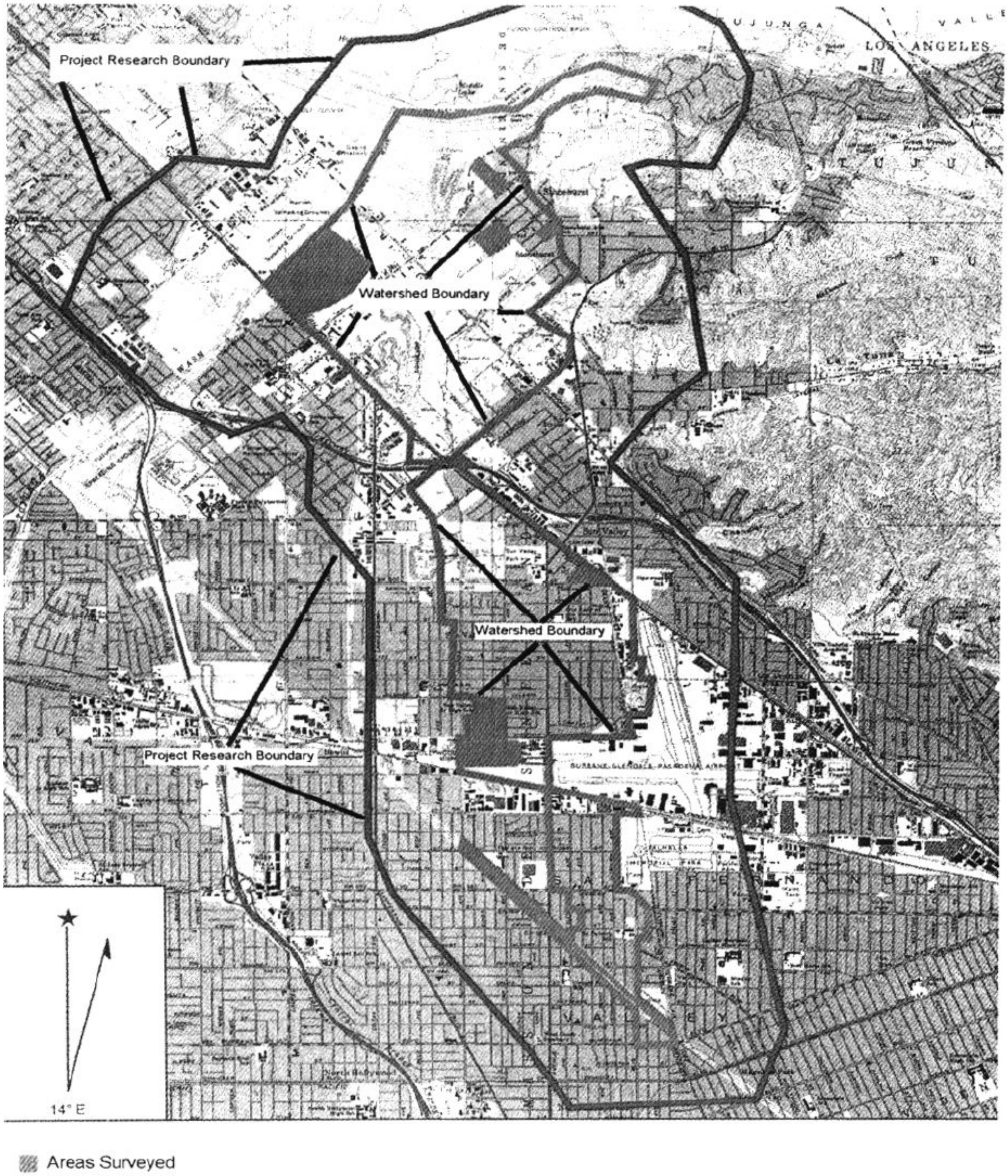

Figure 2. Study Area Map.

National Register of Historic Places Listed: Portal of the Folded Wings Shrine to Aviation and Museum, 10621 Victory Blvd., North Hollywood. 1998031898000246.

Evaluated Structures:

United Airport District (Glendale/Pasadena airport),17 evaluated structures, 2627-2761 Hollywood Way), 1929-1960. 6 (all determined ineligible for National Register).

1240 Cordova St., rehabilitated property, determined ineligible for National Register by consensus (6Y).

Surveys in search area: 14

Historical Quad maps:

USGS Santa Monica 15', 1902
USGS Santa Monica 15', 1921
USGS San Fernando 15', 1900
USGS San Fernando 15', 1924
USGS San Fernando 15', 1940

There have been 29 cultural resource investigations within a 0.5-mile radius of the watershed area. Four of these are within the impact areas and 11 are within the watershed boundary. An additional 14 surveys have been conducted within a half-mile of the project boundary. Table 1 provides the Project Component number(s), Information Center project number, name of the project, type of investigation, author and date, and results of the investigation.

Table 1. Summary of Cultural Resource Investigations

Project Component No.	Survey Number	Name of Project	Type of Investigation	Author/Date	Cultural Resources Found
Investigations Within Impact Areas					
15, 16, 17	L2950	Pacific Pipeline	Linear Survey	Peak and Associates 1992	Multiple, but none in impact areas
15	L4680	Stone House Survey	Architectural	Knight 1999	Positive (park structure)
16	L4907	Valley Generating	Archaeological	Maki 2000	Negative

Table 1. Summary of Cultural Resource Investigations

Project Component No.	Survey Number	Name of Project	Type of Investigation	Author/Date	Cultural Resources Found
		Systems for Dept. of Water and Power			
6, 16	L3486	East Valley Water Reclamation Project	Inventory (non-specific)	Stickel 1994	Positive (but none in impact areas)
Investigations within Watershed Area					
N/A	L3727	Cahuenga between Victory and Whitnall	Historic Property Survey	Anonymous 1977a	Positive (multiple historical structures)
N/A	L3725	Burbank from Clyborn to Lankershim	Historic Property Survey	Anonymous 1977b	Negative
N/A	L370	Sunland-Kay Property	Inventory (non-specific)	Anonymous 1978	Negative
N/A	L4671	Hansen Dam Swimming Area	Inventory (non-specific)	Anonymous 1992	Negative
N/A	L5019	Pacific Bell Wireless Facility, LA353-02	Inventory (non-specific)	Lapin 2000a	Negative
N/A	L5020	Pacific Bell Wireless Facility, LA353-01	Inventory (non-specific)	Lapin 2000b	Negative
N/A	L5597	Pacific Bell Wireless Facility, LA958-11	Inventory (non-specific)	Lapin 2000c	Negative
N/A	L384	Sepulveda Basin Inventory	Inventory and evaluation	Martz 1977	Positive (four sites)
N/A	L3979	Pacific Bell Mobile Services LA133-02	Archaeological Survey	McLean 1998	Negative
N/A	L2645	Southern Pacific Railroad	Inventory (non-specific)	Peak and Associates 1991	Positive (none in watershed)
		On and Off	Archaeological		

Table 1. Summary of Cultural Resource Investigations

Project Component No.	Survey Number	Name of Project	Type of Investigation	Author/Date	Cultural Resources Found
N/A	L4858	Ramps on I-5 and I-710	Survey	Smith 2000	Negative
Investigations within 0.5-mile radius area outside of watershed					
N/A	L1578	LA Rail Rapid Transit	Archaeological Inventory	Anonymous 1983	Negative
N/A	L2688	Ormond St. Subdivision	Environmental Impact Report	Anonymous 1984	Negative
N/A	L3095	Hansen Dam Basin	Cultural Resource Assessment	Brock, Elliot, and Harris 1993	Positive (eight sites)
N/A	L5023	Pacific Bell Mobile Services LA748-04	Cultural Resource Assessment	Duke 2000	Negative
N/A	L5592	Pacific Bell Mobile Services LA959-09	Cultural Resource Assessment	Gray 2000	Negative
N/A	L629	5.58 Acre Parcel in Sunland	Archaeological Assessment	Singer and Kirkish 1979	Negative
N/A	L2969	Management Plan for Hansen Dam	Management Plan	Romani, Romani, and Sturm 1994	Positive (seven sites)
N/A	L2693	Draft EIR No. 68-84-SUB	Environmental Impact Report	Padon 1986	Positive (one site)
N/A	L149	Tujunga Valley Business Park	Archaeological Assessment	Padon 1988	Negative
N/A	L1020	Tentative Tract 40395	Cultural Resource Survey	Romani and Hawthorne 1980	Negative
N/A	L999	Tract Number 41695	Cultural Resource Survey	Tartaglia 1981	Negative
N/A	L627	Tentative Tract No. 38056	Cultural Resource Impact Assessment	Wessel 1979	Negative
N/A	L1160	EIR No. 413-81-ZC	Environmental Impact Report	Wessel 1981	Negative

Table 1. Summary of Cultural Resource Investigations

Project Component No.	Survey Number	Name of Project	Type of Investigation	Author/Date	Cultural Resources Found
N/A	L3106	Orcas Park Study	Archaeological Study	Wlodarski 1994	Positive (two sites)

Results and Conclusions

1. Cal Mat Pit

This facility could not be accessed. A reconnaissance of the perimeter indicated a large deep pit surrounded by a berm and screened with vegetation. This component was surrounded by a chainlink fence and barbed wire. The pit appears heavily disturbed and the likelihood of prehistoric materials being present is probably nil. There is a potential that historical machinery, refuse, and structures dating to the earliest period of use may be extant.

2. New Park on Wentworth

This parcel is partially fenced and has weedy plants scattered throughout. The overall topography is irregular with soil and gravel mounds, shallow depressions, and berms. It appears that the area has been subject to mechanical alterations. Ground visibility was excellent with negligible coverage of plants. Modern trash, plastics, Styrofoam containers, and other litter is scattered about the parcel. No prehistoric or historical archaeological materials were observed. The soil appears to be a mix of loam, cobbles, gravel, and pebbles suggesting an alluvial deposition. Based on the apparent disturbance, lack of visible cultural materials, and the alluvial deposition, it is unlikely that any significant cultural materials are present.

3. Onsite BMPs

On-site BMP locations have not been determined, although they will be located in residential, commercial, and other urban settings. There is a potential that archaeological resources may be present, but road construction disturbance and the factor that the area was historically a floodplain, make this a low possibility.

4. Tree Planting and Mulching

The excavation of holes for planting of trees has the potential for disturbing archaeological resources. The growth of root systems also has the ability to affect buried cultural materials. There is a potential that archaeological resources may be present, but disturbance and the factor that the area was historically a floodplain, make this a low possibility.

5. Parking Lot on Sherman Way

This component is a series of small commercial enterprises consisting of multiple buildings, sheds, modular structures, parking areas, and small business-related facilities. Ground visibility is minimal and no artifacts were observed. The component and surrounding topography are relatively flat and regular. There have been few archaeological surveys conducted in this area and there are no known archaeological sites within 1 mile of the project component. The earliest topographic maps for the area (1893) depict the general area as part of the Tujunga Wash flood plain and the likelihood of either prehistoric or historical resources within this element of the project is low.

6. Power Line Easement

The segment of power transmission lines consists of three parallel sets of towers and line. The two lines on the southerly side appear to be older than the line on the northerly side, although it is not clear what the ages are. The transmission line corridor is fairly wide, with some areas fenced and others open. The amount and type of vegetation varies across the alignment and ranges from patchy weeds to well manicured lawns. Several dog parks are located near the southern end near Burbank Boulevard. There are also a couple of plant nursery related facilities within the easement. Ground visibility ranged from excellent to poor. No artifacts were noted within accessible areas with good visibility. The corridor is flat and regular in keeping with the surrounding neighborhood.

Recent work in the Angeles National Forest has found that transmission line corridors are potentially eligible to the California Register of Historical Resources (Michael McIntyre, personal communication 2003). There have been few archaeological surveys conducted in this area and there are no known archaeological sites within 1 mile of this project segment. The earliest topographic maps for the area (1893) depict the general area as part of the Tujunga Wash flood plain and the likelihood of prehistoric or historical archaeological resources within this element of the project is low. The power line and/or corridor may qualify as an important historical resource. The significance of the resource may lie in its contribution to the historical development of the area, innovative technology, and possibly with associations with important persons.

7. Roscoe Elementary School

The school consists of multiple buildings, sheds, modular structures, gym fields, parking areas, and other related facilities. The main building of the school was built in 1939 and a plaque commemorates this near the front door. It is reported that an earlier school building erected in 1917 had been demolished and replaced by modular structures (Richard Lioy, personal communication 2003). Ground visibility is minimal and no artifacts were observed. The school grounds and surrounding topography are relatively flat and regular. There have been few archaeological surveys conducted in this area and there are no known archaeological sites within 1 mile of the project component. The earliest topographic maps for the area (1893) depict the general area as part of the Tujunga Wash flood plain and the likelihood of prehistoric resources within this element of the project is low.

The presence of early structures, ca. 1917, suggests that this project component has some historical archaeological potential in the form of privies, structural remains, artifact deposits, and other associated cultural features.

8. Sheldon Pit and Tujunga Wash Diversion

There was no access to this facility. A reconnaissance of the perimeter indicated a large deep pit surrounded by a berm and screened with vegetation. A chain link fence and barbed wire surround the facility. The general impression is that the pit is very heavily disturbed and the likelihood of prehistoric materials being present is probably nil. Because of the age of the facility, there is a potential that historical machinery, refuse, and structures dating to the earliest period of use may be extant.

9. Stonehurst Elementary School

The school consists of multiple buildings, sheds, modular structures, playgrounds, garden, and other related facilities. Ground visibility is minimal and no artifacts were observed. The school grounds and surrounding topography are relatively flat and regular. There have been few archaeological surveys conducted in this area and there are no known archaeological sites within a mile of the project component. The earliest topographic maps for the area (1893) depict the general area as part of the Tujunga Wash flood plain and the likelihood of either prehistoric or historical resources within this element of the project is low.

10. Stonehurst Park

This small Los Angeles City Park is grass covered with a scattering of mature trees. There is stone building complex on the east side of the park, dating to ca. 1930. The structure is the Stonehurst Recreation Center Building, and City of Los Angeles Historic-Cultural Monument #172. It was constructed of native stone by Dan Montelongo who, with his helpers, laid the round and smooth rock which they picked up in the local area (Knight 2002:35). A United States Army Searchlight detachment was briefly stationed at the park during World War II. The stone building was used as the headquarters and the troops billeted in tents in the park. Demolition was considered due to earthquake damage in 1975 and in the 1980s but local opposition saved the structure. A new larger recreation building was built and many of the activities that took place in the original building were transferred there. It is also reported that a low stone wall was built around the perimeter of the park but was demolished for safety reasons. Also demolished was a stone wading pool (Knight, personal communication 2003).

The park is well maintained and the stone building appears to be in good condition. Ground visibility was almost zero and no artifacts were observed. The history of the park (ca. 1930) and the report that stone features were demolished suggest that there is some historical archaeological potential.

11. Storm Drains

Although storm drains will be in street right-of-ways which probably have had some level of disturbance, there is a possibility that buried cultural resources may be present in areas contiguous to earlier trenches. There is a potential that archaeological resources may be present, but road construction, storm drain disturbance, and the factor that the area was historically a floodplain, make this a low possibility.

12. Strathern Pit

Stormwater Reuse Pipeline from Strathern Pit

This linear component is currently a paved road, and there was no visibility of native soils. The asphalt road is slightly lower than the surrounding landscape and presumably was graded in preparation for paving. There have been few archaeological surveys conducted in this area and there are no known archaeological sites within 1 mile of the project component. The earliest topographic maps for the area (1893) depict the general area as part of the Tujunga Wash flood plain. The likelihood of either prehistoric or historical resources within the road right-of-way is low.

Infiltration in Tujunga Spreading Grounds

The Tujunga spreading grounds are heavily disturbed, with berms, basins, pipelines, and various unidentified elements. There have been few archaeological surveys conducted in this area and there are no known archaeological sites within 1 mile of the project component. The earliest topographic maps for the area (1893) depict the general area as part of the Tujunga Wash flood plain and the likelihood of either prehistoric or historical resources within this element of the project is low.

13. Street Storage

The street storage system will be in street right-of-ways which probably have had some level of disturbance, but there is a possibility that buried cultural resources may be present. There is a potential that archaeological resources may be present, but road construction disturbance and the factor that the area was historically a floodplain, make this a low possibility.

14. Sun Valley Middle School

The school consists of multiple buildings, sheds, modular structures, gym fields, parking areas, and other related facilities. Ground visibility is minimal and no artifacts were observed. The school grounds and surrounding topography are relatively flat and regular. There have been few archaeological surveys conducted in this area and there are no known archaeological sites within 1 mile of the project component. The earliest topographic maps for the area (1893) depict the general area as part of the Tujunga Wash flood plain and the likelihood of either prehistoric or historical resources within this element of the project is low.

15. Tuxford Green

This particular facility is paved and ground visibility was limited to a grassy area on the southwest corner. Visibility is minimal and no artifacts were observed. The paved areas and surrounding topography are relatively flat and regular. There have been few archaeological surveys conducted in this area and there are no known archaeological sites within 1 mile of the project component. The earliest topographic maps for the area (1893) depict the general area as part of the Tujunga Wash flood plain and the likelihood of either prehistoric or historical resources within this element of the project is low.

16. Valley Steam Plant

This ca. 1950s power plant consists of oil generators, a new jet engine generating facility, rail spurs, a gravel pit, oil tanks, tower erection training facilities, utility pole training facility, offices, parking lots, and other associated power generating structures and facilities. The gravel pit in the northwest center of the parcel may predate the plant (Mario Acevedo, personal communication 2003). The facility is old enough to be considered an historical resource, i.e., older than 50 years. While the level of disturbance within the overall facility is high, there is a potential that historical archaeological deposits or features may still be present. The plant itself may qualify as an important historical resource.

17. Vulcan Gravel Processing Plant

There was no access to this facility. A reconnaissance of the perimeter indicated numerous buildings, mounds of various materials, including gravel, with extensive paved areas. A chain link fence surrounds the facility. The overall topography is flat and appears to be graded. The general impression is that the area is heavily disturbed and the likelihood of prehistoric materials being present is probably nil. It was difficult to discern any items that might be historical. The entire facility is extremely busy and overall appears to be relatively modern in both machinery and structures, although this is only an impression.

Table 2. Summary of Findings by Component		
	Sensitivity	
Component	Prehistoric	Historical
1. Cal Mat Pit	Low	Possible
2. New Park on Wentworth	Low	Low
3. Onsite BMPs	Low	Low
4. Tree Planting & Mulching	Low	Low
5. Parking Lot on Sherman Way	Low	Low
6. Power Line Easement	Low	Possible (Low for archaeology)
7. Roscoe Elementary	Low	Possible
8. Sheldon Pit & Tujunga Wash Diversion	Low	Possible
9. Stonehurst Elementary School	Low	Low
10. Stonehurst Park	Low	Possible
11. Storm Drains	Low	Low
12. Strathern Pit	Low	Possible
13. Street Storage	Low	Low
14. Sun Valley Middle School	Low	Low
15. Tuxford Green	Low	Low
16. Valley Steam Plant	Low	Possible
17 Vulcan Gravel Processing Plant	Low	Low

Of the 17 various components, seven have a potential for historical resources. Of these, three are gravel pits and may have some significance related to the gravel industry in the Los Angeles region. Three other components, Stonehurst Park, Valley Steam Plant, and Roscoe Elementary have sufficient age and historical usage that buried archaeological materials may be present.

Recommendations

The archival research indicated the presence of structures within the watershed by the 1880s, ranging from residences to commercial buildings. There is a potential that archaeological deposits, features, refuse deposits, wells, privies, or structural remains of any of the old buildings may be present under the existing structures or parking lots.

No prehistoric or historical artifacts or features were noted or observed on the visible surfaces. Although the survey was constrained by a lack of visibility, the probability of encountering cultural materials is considered high in some areas (Stonehurst Park, Roscoe Elementary, and the gravel pits) and low in others. This judgment is based on the number and type of known cultural resources in the vicinity and background research which indicates the presence of potential resources within the project area as well as the general vicinity.

The proposed Watershed Management Plan would result in an adverse impact per CEQA if the gravel pits were found to be historically important. It is our preliminary opinion that the importance of the resource would be its association with events that have made a significant contribution to the broad patterns of local or regional history, which in this case would be construction of the Los Angeles Harbor from 1897-1913 (Jones & Stokes 2000:4). However, the integrity of the resources and settings have been compromised since the development of the Harbor and lacking such it would not be eligible to the California Register of Historical Resources. Development of the power line easement under the Watershed Management Plan would not result in a substantial adverse change in the significance of a historical resource since the improvements would not affect the setting or physical nature of the resource after completion. It is assumed that the resource would not be destroyed or materially altered during construction. No monitor is required.

A professional monitor qualified in historical archaeology is recommended for any subsurface work between the surface and five feet in depth within the New Park on Wentworth, Roscoe Elementary School, and Valley Steam Plant (7, 10, and 16). Should potentially important cultural deposits be encountered in the course of construction, work should be temporarily diverted from the vicinity of the discovery until the monitoring archaeologist can identify and evaluate the importance of the find, conduct any appropriate assessment, and implement mitigative measures, if necessary. We have not had access to the three gravel pit components (1, 8, and 12). Surface inventories are recommended to advance an evaluation of machinery, refuse, and structures, if present and from the period of significance. A monitor should attend the first day of subsurface work to assess whether further efforts might be warranted.

Evaluation of Importance: The California Register of Historical Resources

In 1992, the California legislature established the California Register of Historical

Resources based on the federal model which established the National Register of Historic Places (National Historic Preservation Act of 1966). The California Register is to be used as a guide by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change. The California Register, as instituted by the California Public Resources Code (PRC), includes all California properties already listed in the National Register and those formally determined to be eligible, as well as specific listings of State Historical Landmarks and State Points of Historical Interest (Public Resources Code [PRC] Section 5024.1[d]). The California Register may also include various other types of historical resources which meet the criteria for eligibility.

As defined by Section 15064.5(a) of the State CEQA Guidelines, the term "historical resource" shall include the following:

A. A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (PRC Sections 5024.1);

B. A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the PRC or identified as significant in an historical resource survey meeting the requirements Section 5024.1(g) of the PRC, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant;

C. Any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (PRC Section 5024.1[a]) including the following:

    1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
    2. Is associated with the lives of persons important in our past;
    3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
    4. Has yielded, or may be likely to yield, information important in prehistory or history.

The gravel pits are subject to reclamation polices under the Surface Mining and Reclamation Act (SMARA) of 1975 and City of Los Angeles General Plan Land Use Element – Sun Valley Community Plan. However, SMARA is predicated on compliance with CEQA and its guidelines. The Sun Valley Community Plan states "The utilization of sand and gravel areas shall be conducted in such a way as to conserve sand and gravel resources for future availability and use, minimize the impact of extractive activities upon residential and commercial areas, and provide for the reclamation and reuse of exhausted pits. Where located next to residential areas, consideration should be given to setting aside portions of reclaimed sites for open space or recreational uses." Although their program is outside of the purview of this investigation, the County may consider working with the City of Los Angeles in setting aside portions of reclaimed sand and gravel mining sites for open space or recreational uses.

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Albert Knight, Archaeologist
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Michael McIntyre, Angeles National Forest Archaeologist

Appendix F
Groundwater Modeling Report

Appendix F contains the groundwater modeling report completed for the proposed project by LADWP (2003).

UPPER LOS ANGELES RIVER AREA WATERMASTER

CITY OF LOS ANGELES VS. CITY OF SAN FERNANDO, ET AL
CASE NO. 650079 -- COUNTY OF LOS ANGELES

MELVIN L. BLEVINS -- WATERMASTER

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May 21, 2003

Mr. Michael Drennan
Montgomery Watson Harza
301 North Lake Avenue, Suite 600
Pasadena, CA 91101

Dear Mr. Drennan:

Subject: Groundwater Modeling for the Sun Valley Watershed Project

Enclosed is the result of groundwater modeling for the Sun Valley Watershed Project. We apologize for the delay in completing the modeling tasks.

Please call me at (213) 367-0896, if you have any questions. We look forward to continuing our work with you and the Sun Valley Watershed Stakeholders Group.

Sincerely,

Mark G. Mackowski
Assistant ULARA Watermaster

MGM:bw
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Enclosure

c: <u>Administrative Committee Members</u>
Mr. Fred Lantz, City of Burbank
Mr. Michael Sovich, Crescenta Valley Water District
Mr. Michael Drake, City of San Fernando
Mr. Donald Froelich, City of Glendale
Mr. Thomas Erb, City of Los Angeles

Mr. Richard F. Harasick, LADWP
Mr. Hadi S. Jonny, LADWP

<u>Watermaster Staff</u>
Mr. Melvin L. Blevins, Watermaster
Mr. Frederic Fudacz, Special Counsel
Mr. Mark G. Mackowski, Assistant Watermaster
Ms. Patricia T. Kiechler, Administrator

Groundwater Modeling for the Sun Valley Watershed Project

1.1 Objectives

The objectives of the Groundwater Modeling for the Sun Valley Watershed Project are as follows:

- Evaluate the effect of the proposed recharge on San Fernando Basin (SFB) groundwater elevations and flow directions
- Qualitatively determine if the change in groundwater elevations and flow directions will affect the shape and configuration of the existing contaminant plumes, or inundate local landfills

1.2 Approach and Assumptions

The SFB Groundwater Flow Model (Flow Model) is used to simulate the long-term operation of the SFB to determine the groundwater elevations and flow directions in response to estimated recharge and pumping activity.

A 10-year SFB operation is simulated with the Flow Model. The estimated monthly recharge and discharge values for the 2000-01 Water Year were projected on a monthly basis to cover the 10-year model simulation.

The following 10-year SFB operations were simulated with the flow model to compare the groundwater elevations and flow directions:

Case 1 - No recharge at Sun Valley Watershed proposed infiltration sites
Case 2 – Recharge of 8,327 acre-feet per year (AF/Y) at the proposed infiltration sites

The estimated groundwater elevations and the corresponding groundwater flow directions for each case are superimposed over the year 2001 Trichloroethylene (TCE) contaminant plume map to determine the possible effect of additional recharge on the shape of the existing plume.

The flow model used in this assessment simulates only the groundwater flow within the saturated zone. The vadose zone was not addressed in this study.

1.3 Flow Model Description

The Flow Model was originally developed as part of the "Remedial Investigation of Groundwater Contamination in the San Fernando Valley" (RI), dated December 1992. The RI was prepared by James M. Montgomery Consulting Engineering, Incorporated (now Montgomery Watson Harza), under the direction of the Los Angeles Department of Water and Power (LADWP). At that time, LADWP was serving as the lead agency for the U. S. Environmental Protection Agency (USEPA) under a Cooperative Agreement to conduct the RI.

The physical characterization of the SFB with regard to its geology, hydrology, hydrogeology and contamination with TCE, Tetrachloroethylene (PCE), and Nitrate (NO3) was developed and presented in the RI. The physical characterization of the SFB was based on an evaluation of data from hundreds of wells, including more than 90 RI monitoring wells that were drilled, logged, constructed, and sampled as a part of the RI activities.

The Flow Model is a three-dimensional model that was developed using the MODFLOW program. The physical boundaries and parameters of the SFB, including geologic and hydrogeologic data from the RI monitoring wells and other data used for the SFB physical characterization, were incorporated into the MODFLOW program to develop the Flow Model. A number of RI monitoring wells were constructed in clusters and screened at different depth intervals in key areas of the SFB to provide depth-specific geologic, hydrogeologic, and water quality data for the three-dimensional characterization and vertical layering of the Flow Model.

Figure 1.1 is the base map of the SFB and its groundwater facilities, and Figure 1.2 shows the four model layers and cell configurations.

Historical hydrogeologic, recharge, and pumping data on an annual basis were used as input to perform a 10-year simulation, and the simulated gradients were compared to the historical water levels to adjust and calibrate the model. The Flow Model was also calibrated with the same approach on a month-to-month basis to ensure accuracy of simulations because LADWP operates the SFB by pumping high rates in the summer months and virtually no pumping in the winter months to promote conjunctive use of its water resources. The month-to-month Flow Model calibration also provided verification of the trend of vertical gradients that were observed in the RI cluster wells located near major pumping centers of the SFB. A complete description of the Flow Model is included in Section 6 of the RI Report.

1.4 Model Input

The Flow Model simulates the influence of the following components:

- Subsurface inflow from the Verdugo/Sylmar Basins (820 AF/Y)
- Infiltration of direct precipitation on the valley floor (13,560 AF/Y)
- Return flow recharge from delivered water (54,825 AF/Y)
- Spreading recharge at the Tujunga, Hansen, Branford, Pacoima, and Lopez Spreading Grounds (Table 2)
- Infiltration recharge at sites within the Sun Valley Watershed area
- Extraction from wells owned by LADWP, Glendale, Burbank and others

Table No. 1 is the basin extraction of major producers such as the City of Los Angeles, City of Burbank, City of Glendale, and other individual producers. The total extraction from SFB for the 2000-01 Water Year was 86,946 acre-feet. Table No. 2 is the spreading operations in the SFB for the 2000-01 Water Year. The total water spread within the basin was 17,939 acre-feet. Table No. 3 is the recharge on a monthly basis at the proposed infiltration sites within the Sun Valley Watershed. The estimated total recharge at these sites is 8,327 AF/Y.

Model input data for recharge and extraction are assumed constant throughout the 10-year model simulations.

The Flow Model's initial head values (groundwater elevations) were taken from the 1999-00 Water Year.

Figure 1.3 shows the model cells in which recharge and/or pumping is occurring in the Upper Zone of the SFB. Figure 1.4 shows the model cells in which pumping is occurring in the Lower Zone of the SFB.

Subsequent to the model run, LADWP was informed that two infiltration locations provided by Montgomery Watson Harza were incorrect. Infiltration at Hansen Spreading Grounds and Bradley Landfill will actually occur at Sheldon Pit and CalMat Pit, respectively. The actual infiltration locations are close enough to the modeled locations that the model results remain valid.

1.5 Flow Model Simulation Results

The Flow Model Simulation results for Case 1 and Case 2 showing the groundwater contours and groundwater flow directions in the Upper Zone of the SFB superimposed over the year 2001 Trichloroethylene (TCE) contaminant plume map are presented in Figures 1.5 and 1.6, respectively.

<u>Evaluation of Model Results: Case 1 - No recharge at the proposed Sun Valley Watershed infiltration sites (Fig. 1.5)</u>.

The simulated groundwater flow direction at the end of 10 years of operation in the areas away from the effects of well field pumping is from northwest to southeast. Flow near the well fields is radial toward the center of the well fields. Flow is from north to south in the vicinity of the Hansen Spreading Grounds (upgradient of the Verdugo Fault) and at the Los Angeles River Narrows.

The most noticeable features are the cones of depression (pumping cones) that have developed around the Burbank Operable Unit (OU), North Hollywood-West , Tujunga, and Rinaldi-Toluca Well Fields. The simulated 10-year average groundwater elevations at the center of SFB well fields are as follows: Burbank OU - 470 feet; Rinaldi-Toluca - 495 feet; Tujunga - 500 feet.

Evaluation of Model Results: Case 2 - Sun Valley Watershed infiltration sites in operation at 8,327 AF/Y (Fig. 1.6).

The simulated 10-year groundwater flow directions are similar to Case 1 flow directions.

Again, the most noticeable features are the cones of depression (pumping cones) that have developed around Burbank OU, North Hollywood-West , Tujunga, and Rinaldi-Toluca Well Fields. The simulated 10-year average groundwater elevations at the center of SFB well fields are as follows: Burbank OU - 470 feet; Rinaldi-Toluca - 515 feet; Tujunga - 520 feet. The groundwater elevations upgradient of the Burbank OU are increased by about 20 feet compared to Case 1. This increase was due to the additional recharge added to the SFB at the proposed Sun Valley Watershed infiltration sites. The total recharge for the 10-year simulation period is 83,270 acre-feet.

The effects of groundwater recharge should not pose a problem with respect to inundation of nearby landfills. The groundwater elevation beneath Bradley Landfill after the 10-year simulation period will be approximately 690 feet. Furthermore, the Regional Water Quality Control Board, Bradley Landfill, ULARA Watermaster, and Los Angeles County have established a monitoring well "alert level" beneath the landfill at elevation 745 feet that, if reached, would indicate a cessation of nearby spreading activities to prevent inundation. The difference between the alert level and the maximum simulated groundwater elevation is 55 feet. It is unlikely that this level will be reached, but if it is spreading and infiltration could be reduced or stopped.

In conclusion, the model results show that additional recharge from the proposed Sun Valley Watershed Project will not significantly alter the shape or configuration of the existing contaminant plume, nor will it inundate landfills in the area. Instead, it will help to recharge the basin, which has been experiencing a long-term decline in water table elevations due to pumping and a reduction in artificial spreading.

TABLE NO. 1

SAN FERNANDO GROUNDWATER BASIN EXTRACTIONS

2000-2001 WATER YEAR

(acre-feet)

LACDPW	Owner	2000			2001									
Well No.	Well No.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	TOTAL
						San Fernando Basin								
Angelica Healthcare Services			(abandoned 12/97)											
3934A	M050A													0.00
Auto Stiegler														
---	---	0.55	1.10	0.12	0.00	0.26	1.08	0.76	0.43	0.33	0.00	0.00	0.00	4.63
Boeing (Rockwell International No further pumping until 2000)														
---	E-1 to E-9													0.00
Burbank, City of														
3841C	6A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3882P	7	128.40	62.28	79.09	137.85	122.29	8.45	0.00	0.00	0.00	0.00	0.00	0.00	538.36
3851E	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3851K	13A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3882T	15	111.98	44.51	71.42	117.94	103.30	7.39	0.00	0.00	0.00	0.00	0.00	0.00	456.54
3841G	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total:	240.38	106.79	150.51	255.79	225.59	15.84	0.00	0.00	0.00	0.00	0.00	0.00	994.90
Burbank Operable Unit														
3871L	VO-1	20.72	0.25	0.12	0.15	0.24	28.82	144.98	52.97	30.17	145.55	114.24	15.54	553.75
3861G	VO-2	119.81	150.88	27.32	128.94	59.56	134.90	132.20	135.75	140.86	137.32	59.25	106.13	1,332.92
3861K	VO-3	64.86	44.81	104.06	0.79	57.32	63.83	1.22	9.41	0.35	0.07	33.91	20.22	400.85
3861L	VO-4	131.98	111.69	126.46	124.58	93.16	58.34	139.27	143.10	106.73	131.57	138.32	126.42	1,431.62
3850X	VO-5	161.99	160.01	155.94	150.61	100.45	119.05	79.46	2.78	107.04	166.45	148.27	114.19	1,466.24
3850Z	VO-6	0.98	45.47	0.25	0.14	28.64	28.76	62.56	101.35	0.27	206.25	186.73	127.53	788.93
3850AB	VO-7	3.50	182.23	85.88	177.41	159.25	183.63	162.76	180.92	132.62	199.68	200.42	174.10	1,842.40
3851C	V0-8	159.09	81.87	0.00	0.28	16.99	2.21	124.14	204.58	196.95	208.63	125.66	195.82	1,316.22
	Total:	662.93	777.21	500.03	582.90	515.61	619.54	846.59	830.86	714.99	1,195.52	1,006.80	879.95	9,132.93
CalMat														
4916A	2	1.45	0.00	0.00	36.54	61.67	81.06	96.88	124.64	125.63	109.29	121.56	95.12	853.84
4916	3	70.62	62.52	58.22	30.77	0.00	0.00	0.00	0.00	0.00	0.00	0.10	37.62	259.85
4916(x)	1	131.70	122.33	123.85	110.73	100.15	115.07	109.28	120.59	7.36	103.87	87.51	14.28	1,146.72
Sheldon Pond		135.70	128.94	133.72	1.96	5.42	50.45	126.30	139.01	96.96	105.36	0.00	0.00	923.82
	Total:	339.47	313.79	315.79	180.00	167.24	246.58	332.46	384.24	229.95	318.52	209.17	147.02	3,184.23
First Financial Plaza Site														
N/A	F.F.P.S.	1.74	1.80	1.80	2.38	3.45	7.56	4.82	3.40	2.92	2.42	2.03	1.79	36.11

TABLE NO. 1

SAN FERNANDO GROUNDWATER BASIN EXTRACTIONS

2000-2001 WATER YEAR

(acre-feet)

LACDPW	Owner	2000			2001									
Well No.	Well No.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	TOTAL
							San Fernando Basin (cont'd)							
Forest Lawn Memorial Park														
3947A	2	5.21	9.00	7.81	3.48	0.42	1.92	1.08	0.00	0.00	0.00	0.00	13.38	42.30
3947B	3	8.74	9.94	8.77	3.89	0.48	2.21	6.87	20.93	27.19	26.46	30.85	18.79	165.12
3947C	4	7.81	8.95	3.08	0.24	0.44	2.05	6.06	19.28	24.86	24.36	28.11	17.07	142.31
3858K	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total:	21.76	27.89	19.66	7.61	1.34	6.18	14.01	40.21	52.05	50.82	58.96	49.24	349.73
Glendale, City of														
3924N	STPT 1	1.37	33.02	11.49	24.12	26.42	82.43	25.47	101.15	41.68	75.65	63.77	45.39	531.96
3924R	STPT 2	0.00	0.00	0.00	0.00	0.00	9.51	0.00	0.00	0.00	0.00	0.00	0.00	9.51
GVENT	GVENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total:	1.37	33.02	11.49	24.12	26.42	91.94	25.47	101.15	41.68	75.65	63.77	45.39	541.47
Glendale North/South														
	GN-1	64.65	69.58	76.50	76.29	67.83	54.57	73.98	74.01	73.89	76.79	39.00	49.24	796.33
	GN-2	76.42	78.04	86.80	86.59	77.24	25.63	84.19	83.37	83.54	87.63	44.53	56.17	870.15
	GN-3	67.19	42.38	35.57	35.57	31.73	20.40	34.52	22.72	34.06	32.88	14.24	17.68	388.94
	GN-4	214.93	216.82	223.44	222.27	198.21	223.46	214.93	178.47	212.16	220.58	223.15	214.93	2,563.35
	GS-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	GS-2	56.82	56.56	58.62	58.36	52.27	37.10	56.74	55.76	56.46	58.38	59.04	56.74	662.85
	GS-3	56.28	35.96	35.77	35.64	31.87	20.46	34.58	33.91	34.48	32.84	14.63	17.71	384.13
	GS-4	57.58	55.75	58.43	58.01	52.31	53.06	56.74	56.95	56.80	58.34	58.89	56.27	679.13
	Total:	593.87	555.09	575.13	572.73	511.46	434.68	555.68	505.19	551.39	567.44	453.48	468.74	6,344.88
Greeff Fabrics														
----	-----													0.00
Hathaway (successor to deMille)														
-----	1	2.29	0.57	0.00	0.45	0.57	1.14	1.40	2.43	2.51	2.49	2.97	2.97	19.79
	2	0.96	0.75	0.50	0.75	0.72	1.06	0.51	1.10	1.17	0.83	1.01	1.01	10.37
	3	1.16	0.62	0.41	0.69	0.51	0.69	0.49	0.54	0.55	0.10	0.48	0.48	6.72
	Total:	4.41	1.94	0.91	1.89	1.80	2.89	2.40	4.07	4.23	3.42	4.46	4.46	36.88
Mena, John & Barbara														
4973J		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Metropolitan Transportation Authority														
---	1065	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
---	1075	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
---	1130	0.73	0.80	0.88	1.13	1.02	0.93	0.88	0.69	0.80	0.46	0.38	0.33	9.03
---	1140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
---	1150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
---	1070	3.47	3.45	2.07	2.73	3.12	3.33	3.59	2.97	3.35	2.96	2.31	2.98	36.33
---	1133	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total:	4.20	4.25	2.95	3.86	4.14	4.26	4.47	3.66	4.15	3.42	2.69	3.31	45.36

TABLE NO. 1

SAN FERNANDO GROUNDWATER BASIN EXTRACTIONS

2000-2001 WATER YEAR

(acre-feet)

LACDPW Well No.	Owner Well No.	2000			2001									TOTAL
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	

TABLE NO. 1
SAN FERNANDO GROUNDWATER BASIN EXTRACTIONS
2000-2001 WATER YEAR
(acre-feet)

LACDPW	Owner	2000			2001									
Well No.	Well No.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	TOTAL
							San Fernando Basin (cont'd)							
Metropolitan Water District														
	Jensen	18.90	12.10	15.50	16.00	14.50	15.90	15.90	16.60	15.70	15.80	14.90	30.20	202.00
Mobil Oil Corporation														
---	---	0.19	0.33	0.38	0.08	0.09	0.09	0.15	0.27	0.13	0.30	0.40	0.20	2.61
Middle Ranch (Successor to deMille)														
4931 x	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4940-1	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
new	5	0.02	0.03	0.02	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.13
4940-3	6	0.58	0.62	0.37	0.19	0.11	-0.03	-0.02	0.00	0.03	0.00	1.03	0.24	3.12
4940-2	7	0.12	0.29	0.36	0.08	0.24	0.80	0.71	1.07	1.29	1.05	0.64	0.51	7.16
new	8	0.73	0.82	0.66	0.48	0.18	0.32	0.36	0.30	0.25	0.89	0.79	0.42	6.20
	Spring 1&2	0.04	0.06	0.04	0.03	0.02	0.04	0.05	0.05	0.07	0.06	0.08	0.04	0.58
	Total	1.49	1.82	1.45	0.78	0.55	1.13	1.10	1.48	1.64	2.00	2.54	1.21	17.19
Micro Matics														
JEW	1	0.19	0.26	0.16	0.18	0.22	0.25	0.25	0.27	0.25	0.22	0.26	0.11	2.62
JEW	2	0.05	0.11	0.07	0.07	0.09	0.13	0.11	0.13	0.13	0.12	0.13	0.05	1.19
	Total	0.24	0.37	0.23	0.25	0.31	0.38	0.36	0.40	0.38	0.34	0.39	0.16	3.81
Raytheon (Formerly Hughes Missile Systems)														
----	-----	0.28	0.32	0.14	0.41	0.50	0.36	0.56	0.51	0.27	0.38	0.35	0.29	4.37
Sears Roebuck & Co. (Well disconnected 10/2000)														
3945	3945	17.60	0.00	16.01	16.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.62
Sportsmen's Lodge														
3785A	1	0.01	0.04	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.18
3M-Pharmaceuticals														
---	---	6.16	5.44	5.52	6.95	5.87	5.89	5.99	6.42	5.20	5.14	6.00	5.67	70.25
Toluca Lake Property Owners Association														
3845F	3845F	2.52	2.52	2.52	2.52	0.48	1.52	4.58	6.07	6.14	5.15	0.88	4.74	39.64
Trillium Corporation														
Well #1	---	1.59	2.65	2.43	2.77	1.59	2.20	2.19	1.43	2.37	2.86	3.24	3.07	28.39
Well #2	---	0.63	1.01	0.95	0.63	1.01	0.82	0.57	0.71	1.21	1.37	1.57	1.56	12.04
	Total:	2.22	3.66	3.38	3.40	2.60	3.02	2.76	2.14	3.58	4.23	4.81	4.63	40.43
Valhalla Memorial Park and Mortuary														
3840K	4	6.75	25.69	25.49	7.50	4.46	9.63	25.27	53.84	74.74	45.72	47.83	80.14	407.06
Waste Management Disposal Services of Calif.														
4916D		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE NO. 1

SAN FERNANDO GROUNDWATER BASIN EXTRACTIONS

2000-2001 WATER YEAR

(acre-feet)

LACDPW	Owner	2000			2001									
Well No.	Well No.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	TOTAL
						San Fernando Basin (cont'd)								
Walt Disney Pictures and Television		(wells inactive/ not abandoned)												
3874E	EAST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3874F	WEST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3874G	NORTH	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Walt Disney Riverside Building														
---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Waterworks District No. 21														
---	---	2.04	3.54	2.75	1.79	2.39	3.45	2.03	2.40	1.26	1.32	1.15	2.20	26.32
Wildlife Waystation														
		0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	2.40
Los Angeles, City of														
Aeration (A)														
3800E	A-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3810U	A-2	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	11.82	10.19	0.02	22.07
3810V	A-3	15.15	17.40	8.67	0.00	0.00	0.00	10.53	0.00	0.00	20.33	35.99	24.83	132.90
3810W	A-4	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.04	0.00	9.48	20.86	33.74	64.18
3820H	A-5	1.67	1.60	2.43	0.00	0.00	0.00	2.34	6.42	8.21	6.19	10.67	8.90	48.43
3821J	A-6	33.74	38.45	22.79	0.00	0.00	0.00	11.59	17.58	32.48	31.91	39.25	30.37	258.16
3830P	A-7	31.88	40.93	24.47	0.00	0.00	0.00	12.71	18.98	35.35	28.16	42.12	32.23	266.83
3831K	A-8	38.10	45.13	26.97	0.00	0.00	0.00	13.77	20.47	38.26	36.13	45.66	34.68	299.17
	A Total:	120.54	143.51	85.33	0.00	0.00	0.00	51.02	63.51	114.30	144.02	204.74	164.77	1,091.74
Erwin (E)														
3831H	E-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3821I	E-2A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3831G	E-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3821F	E-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3831F	E-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3821H	E-6	108.33	159.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	267.74
3811F	E-10	50.48	76.03	61.75	60.65	76.53	34.02	0.00	20.08	61.73	16.55	15.90	62.00	535.72
	E Total:	158.81	235.44	61.75	60.65	76.53	34.02	0.00	20.08	61.73	16.55	15.90	62.00	803.46
Headworks (H)														
	H-26A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3893K	H-27A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3893M	H-28A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3893N	H-29A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3893P	H-30A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	H Total:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE NO. 1

SAN FERNANDO GROUNDWATER BASIN EXTRACTIONS

2000-2001 WATER YEAR

(acre-feet)

LACDPW	Owner	2000			2001									
Well No.	Well No.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	TOTAL
North Hollywood (NH)														
3800	NH-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3780A	NH-4	161.04	166.06	0.00	150.61	186.75	0.00	0.00	102.18	149.93	72.06	53.25	128.83	1,170.71
3810S	NH-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	94.83	0.00	64.41	50.82	77.98	288.04
3770	NH-7	136.17	139.89	0.00	0.13	163.84	0.00	0.00	0.00	136.66	0.00	0.00	0.00	576.69
3810	NH-11	0.00	0.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59
3810A	NH-13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3810B	NH-14A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3790B	NH-15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3820D	NH-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3820C	NH-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3820B	NH-18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3830D	NH-19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3830C	NH-20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3830B	NH-21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.04	0.00	0.00	0.06	0.62
3790C	NH-22	211.66	221.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.30	82.39	227.02	788.90
3790D	NH-23	10.30	0.16	12.39	22.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.95
3800C	NH-24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3790F	NH-25	165.63	167.60	0.00	0.06	244.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	577.57
3790E	NH-26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.80	0.00	0.00	0.00	0.00	9.80
3820F	NH-27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3810K	NH-28	0.00	0.00	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55
3810L	NH-29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3800D	NH-30	0.02	0.00	0.00	0.11	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.40
3810T	NH-31	189.37	0.09	0.00	0.00	0.00	0.00	0.00	130.99	0.00	0.00	0.00	184.80	505.25
3770C	NH-32	8.08	196.39	0.00	0.09	220.08	0.00	0.00	166.41	190.17	89.69	68.89	238.70	1,178.50
3780C	NH-33	0.18	0.00	0.00	246.76	298.53	0.00	0.00	0.20	243.13	115.77	88.01	0.16	992.74
3790G	NH-34	0.00	0.11	0.13	0.09	0.34	0.00	0.18	0.59	0.00	0.18	0.18	0.16	1.96
3830N	NH-35	6.26	0.43	0.20	0.00	0.00	0.00	0.00	0.18	0.13	0.00	0.00	234.32	241.52
3790H	NH-36	11.47	0.09	0.00	9.80	373.55	0.00	0.06	0.00	0.00	56.33	48.34	0.11	499.75
3790J	NH-37	0.00	0.22	0.00	9.43	276.92	0.00	0.06	0.00	0.00	0.09	0.00	0.00	286.72
3810M	NH-38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3810N	NH-39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3810P	NH-40	0.00	1.40	0.00	0.00	0.00	0.00	1.03	0.18	0.00	0.00	0.00	0.00	2.61
3810Q	NH-41	0.00	0.57	0.00	0.00	0.00	0.00	0.34	0.18	0.00	0.00	0.00	0.00	1.09
3810R	NH-42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3790K	NH-43A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	268.64	0.00	166.85	0.00	0.00	435.49
3790L	NH-44	363.72	376.30	31.61	375.91	442.67	0.00	0.00	0.00	370.98	196.30	129.17	325.66	2,612.32
3790M	NH-45	431.47	442.97	36.20	378.58	0.00	0.00	0.00	0.00	360.16	0.00	159.25	440.20	2,248.83
	NH Total:	1,695.37	1,714.40	81.08	1,193.67	2,206.96	0.00	1.67	774.97	1,451.20	807.98	680.30	1,858.00	12,465.60

TABLE NO. 1
SAN FERNANDO GROUNDWATER BASIN EXTRACTIONS
2000-2001 WATER YEAR
(acre-feet)

LACDPW Well No.	Owner Well No.	2000 Oct.	2000 Nov.	2000 Dec.	2001 Jan.	2001 Feb.	2001 Mar.	2001 Apr.	2001 May	2001 June	2001 July	2001 Aug.	2001 Sept.	TOTAL
Pollock (P)														
3959E	P-4	167.42	210.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	109.14	103.85	591.31
3958H	P-6	191.16	183.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	131.38	0.34	505.98
3958J	P-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	158.05	158.69
	P Total:	358.58	394.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	241.16	262.24	1,255.98
						San Fernando Basin (cont'd)								
Rinaldi-Toluca (RT)														
4909E	RT-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	401.33	444.83	846.16
4898A	RT-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.44	0.00	3.44
4898B	RT-3	0.00	0.00	0.00	220.04	263.49	0.00	0.02	193.27	375.04	0.00	0.00	0.98	1,052.84
4898C	RT-4	0.00	0.00	0.00	0.59	0.18	0.06	0.02	0.00	0.00	0.00	390.65	437.32	828.82
4898D	RT-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	125.29	60.14	185.43
4898E	RT-6	0.00	0.00	0.00	227.45	266.39	0.00	0.04	198.98	373.98	0.00	376.46	415.70	1,859.00
4898F	RT-7	0.00	0.00	0.00	231.93	275.16	0.00	0.11	194.62	383.31	0.00	383.12	436.93	1,905.18
4898G	RT-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29.66	0.00	413.56	479.47	922.69
4898H	RT-9	0.00	0.00	0.00	237.39	247.06	0.00	0.04	203.05	348.88	0.00	0.00	0.00	1,036.42
4909G	RT-10	0.00	0.00	0.00	250.55	264.62	0.00	0.09	0.39	105.21	0.00	405.41	472.47	1,498.74
4909K	RT-11	0.00	0.00	0.00	0.43	0.18	0.00	0.00	0.00	0.00	0.00	0.52	0.52	1.65
4909H	RT-12	0.00	0.00	0.00	194.03	259.82	0.04	0.06	0.34	103.42	0.00	0.66	0.50	558.87
4909J	RT-13	0.00	0.00	0.00	45.33	0.34	0.00	0.06	0.29	0.00	0.00	0.52	0.48	47.02
4909L	RT-14	0.00	0.00	0.00	0.45	0.18	0.02	0.04	0.32	0.29	0.00	0.00	0.00	1.30
4909M	RT-15	0.00	0.00	0.00	1.35	0.16	0.02	0.04	0.94	0.22	0.00	0.00	0.00	2.73
	RT Total:	0.00	0.00	0.00	1,409.54	1,577.58	0.14	0.52	792.20	1,720.01	0.00	2,500.96	2,749.34	10,750.29
Tujunga (T)														
4887C	T-1	525.45	207.52	146.09	467.90	210.58	0.00	476.83	582.32	505.99	490.79	568.25	499.81	4,681.53
4887D	T-2	500.52	199.21	135.35	444.97	198.53	0.00	447.75	551.19	479.68	465.81	596.32	475.30	4,494.63
4887E	T-3	582.78	231.15	161.70	525.32	233.72	0.39	530.80	648.57	562.97	548.18	697.31	552.64	5,275.53
4887F	T-4	449.10	61.59	147.01	475.29	210.00	0.41	453.94	583.81	123.04	0.68	0.25	0.00	2,505.12
4887G	T-5	0.00	0.52	0.50	0.25	0.48	0.32	321.28	591.78	127.68	0.00	0.00	0.00	1,042.81
4887H	T-6	0.00	0.78	0.16	0.78	0.00	0.25	0.27	0.78	227.47	94.21	651.65	516.59	1,492.94
4887J	T-7	0.00	0.59	0.32	0.22	0.39	1.21	0.34	0.71	267.76	0.36	0.57	0.00	272.47
4887K	T-8	0.00	0.55	0.27	0.20	0.66	0.45	0.61	0.48	169.92	506.17	642.92	509.48	1,831.71
4886B	T-9	487.02	73.18	151.53	478.78	35.58	1.46	0.78	0.45	132.66	497.38	628.87	487.60	2,975.29
4886C	T-10	464.21	78.19	0.96	0.36	1.28	0.84	503.21	620.93	530.16	505.14	629.59	488.24	3,823.11
4886D	T-11	0.00	0.00	0.41	0.68	0.27	0.27	0.48	0.00	0.00	0.00	0.00	0.00	2.11
4886E	T-12	539.00	214.25	158.93	486.38	237.16	1.76	487.58	531.72	497.77	515.35	583.31	444.74	4,697.95
	T Total:	3,548.08	1,067.53	903.23	2,881.13	1,128.65	7.36	3,223.87	4,112.74	3,625.10	3,624.07	4,999.04	3,974.40	33,095.20

TABLE NO. 1
SAN FERNANDO GROUNDWATER BASIN EXTRACTIONS
2000-2001 WATER YEAR
(acre-feet)

LACDPW	Owner	2000			2001									
Well No.	Well No.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	TOTAL
						San Fernando Basin (cont'd)								
Verdugo (V)														
3863H	V-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3863P	V-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37	0.00	0.00	0.00	0.00	1.37
3863J	V-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3863L	V-11	147.38	221.30	185.44	184.34	236.31	98.50	0.00	149.35	178.74	46.55	21.37	190.70	1,659.98
3853G	V-13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3854F	V-22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3844R	V-24	202.15	297.79	249.95	249.17	318.77	139.27	0.00	230.11	280.11	27.47	32.92	293.06	2,320.77
	V Total:	349.53	519.09	435.39	433.51	555.08	237.77	0.00	380.83	458.85	74.02	54.29	483.76	3,982.12
Whitnall (W)														
3820E	W-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3821B	W-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3821C	W-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3821D	W-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3821E	W-5	0.00	0.36	0.00	68.91	88.33	0.00	0.00	0.00	0.00	0.00	0.00	259.96	417.56
3831J	W-6A	56.56	86.61	69.39	93.73	111.08	39.23	0.00	82.73	196.34	65.56	68.61	128.92	998.76
3832K	W-7	84.06	117.51	95.40	0.00	0.00	48.04	0.00	37.35	107.59	27.59	30.94	0.00	548.48
3832L	W-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3832M	W-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3842E	W-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	W Total:	140.62	204.48	164.79	162.64	199.41	87.27	0.00	120.08	303.93	93.15	99.55	388.88	1,964.80
Los Angeles, City of Total:		6,371.53	4,278.45	1,731.57	6,141.14	5,744.21	366.56	3,277.08	6,264.41	7,735.12	4,759.79	8,795.94	9,943.39	65,409.19
San Fernando Basin Total:		8,300.81	6,157.36	3,383.57	7,828.32	7,233.48	1,838.69	5,122.65	8,227.96	9,446.06	7,057.60	10,676.76	11,672.95	86,946.19

TABLE NO. 3

PROPOSED SUN VALLEY WATERSHED INFILTRATION SITES OPERATIONS

(ACRE-FEET)

Infiltration Sites	AF Infiltrated per Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hansen Spreading Grounds	1041.0	1041.0	1041.0	0	0	0	0	0	0	1041.0	1041.0	1041.0
Bradley Landfill	41.9	41.9	41.9	0	0	0	0	0	0	41.9	41.9	41.9
Tujunga Spreading Grounds	132.8	132.8	132.8	0	0	0	0	0	0	132.8	132.8	132.8
Sun Valley Park	8.7	8.7	8.7	0	0	0	0	0	0	8.7	8.7	8.7
Powerline Easement	85.9	85.9	85.9	0	0	0	0	0	0	85.9	85.9	85.9
Subarea 33 Parking Lot Infiltration	19.7	19.7	19.7	0	0	0	0	0	0	19.7	19.7	19.7
LADWP Steam Plant	16.4	16.4	16.4	0	0	0	0	0	0	16.4	16.4	16.4
Vulcan Gravel Processing Plant	8.5	8.5	8.5	0	0	0	0	0	0	8.5	8.5	8.5
Tuxford Green	0.5	0.5	0.5	0	0	0	0	0	0	0.5	0.5	0.5
Sun Valley Middle School	6.0	6.0	6.0	0	0	0	0	0	0	6.0	6.0	6.0
BMP	26.4	26.4	26.4	0	0	0	0	0	0	26.4	26.4	26.4

FIGURE 1.1

Major Groundwater Facilities in the San Fernando Basin including Sun Valley Watershed proposed infiltration sites

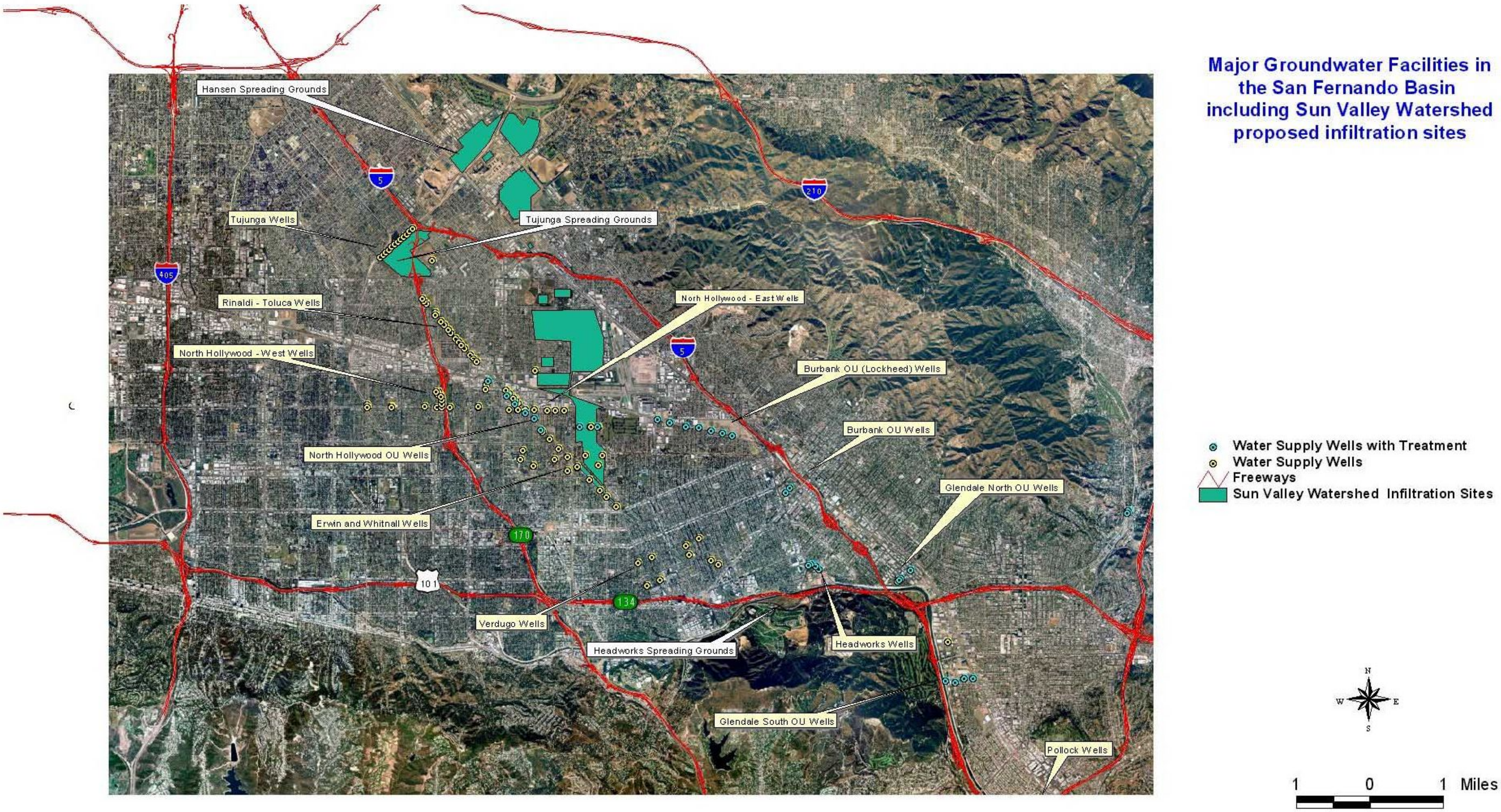


Figure 1.2
Model Layers and Cell Configurations

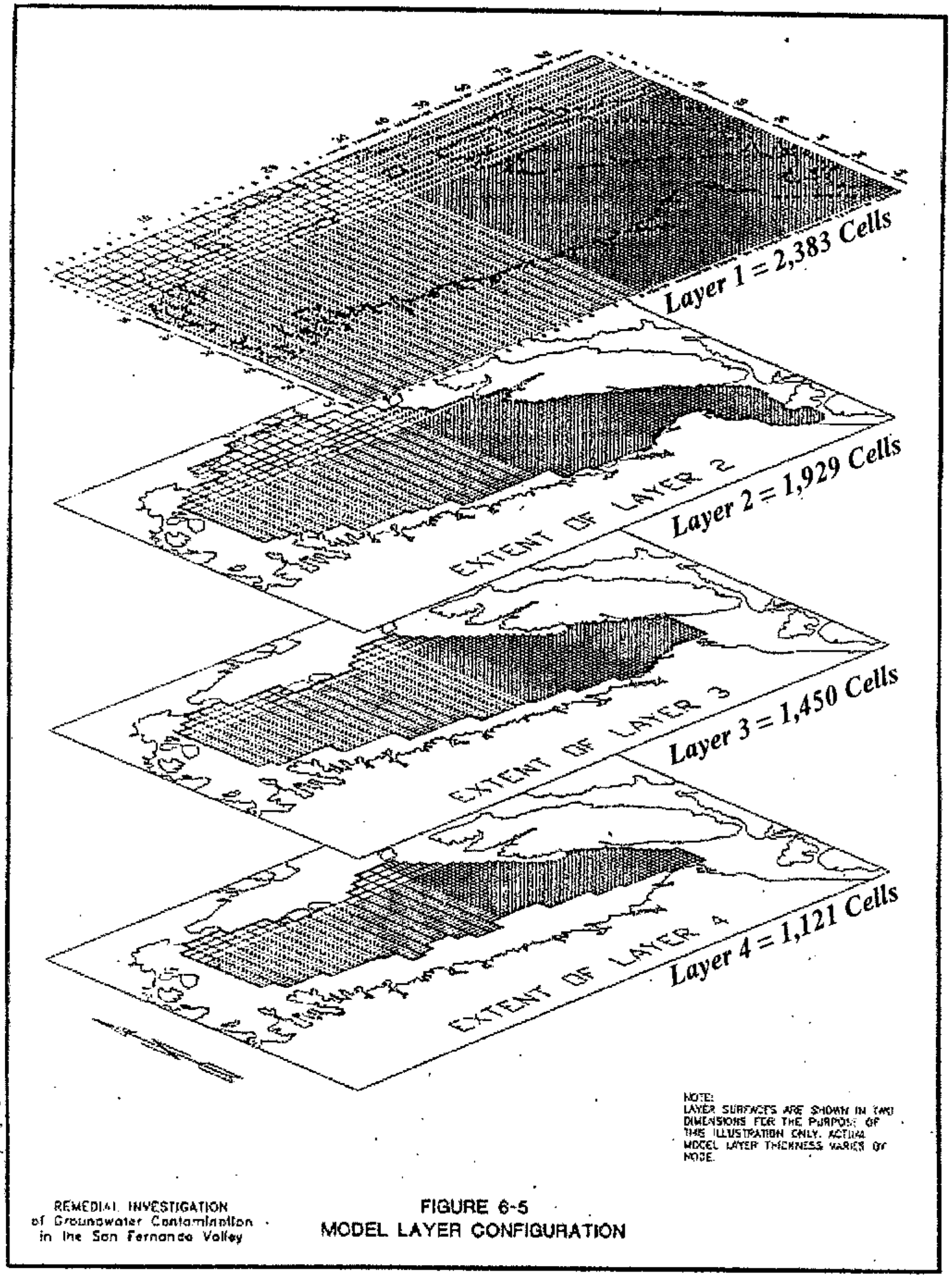
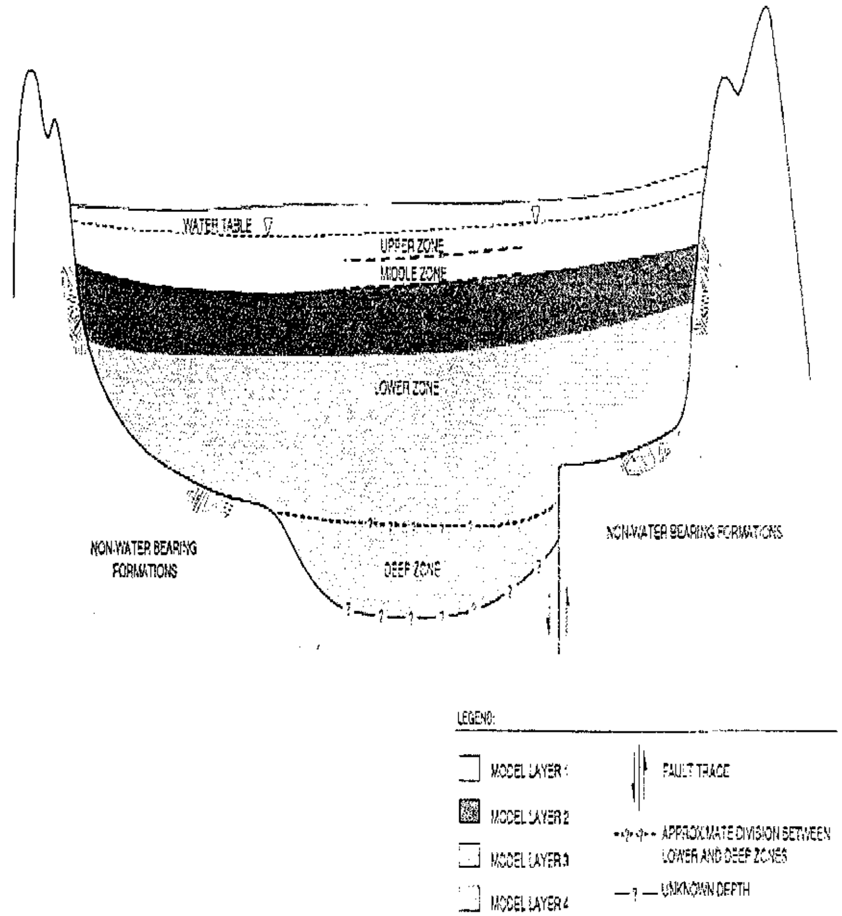


FIGURE 6-5
MODEL LAYER CONFIGURATION



Source: Remedial Investigation Report of Groundwater Contamination in the San Fernando Valley, December 1992

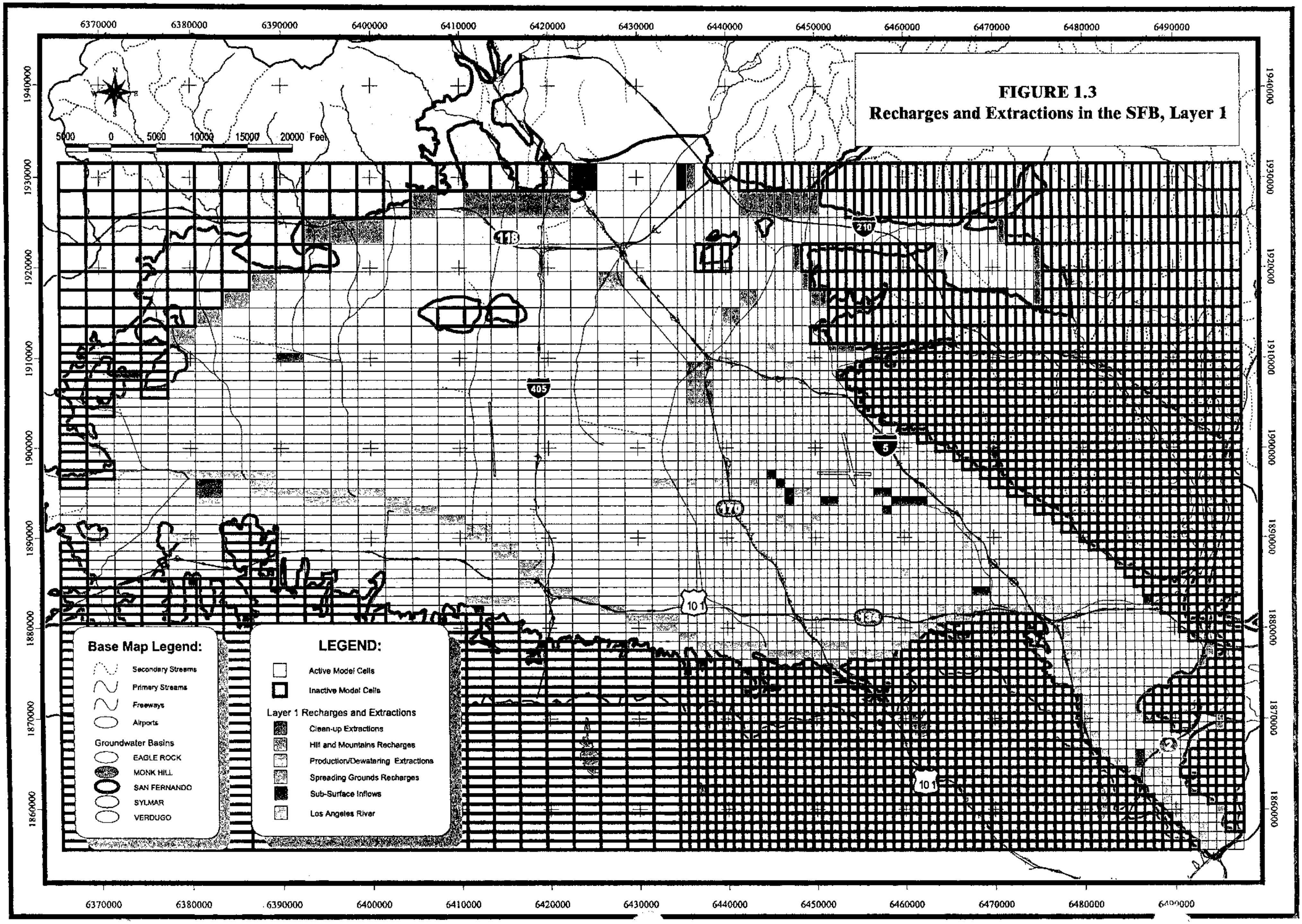


FIGURE 1.3
Recharges and Extractions in the SFB, Layer 1
6370000
6380000
6390000
6400000
6410000
6420000
6430000
6440000
6450000
6460000
6470000
6480000
6490000
1940000
1930000
1920000
1910000
1900000
1890000
1880000
1870000
1860000
5000
0
5000
10000
15000
20000 Feet
N
S
E
W
118
405
210
5
170
101
134
Base Map Legend:
Secondary Streams
Primary Streams
Freeways
Airports
Groundwater Basins
EAGLE ROCK
MONK HILL
SAN FERNANDO
SYLMAR
VERDUGO
LEGEND:
Active Model Cells
Inactive Model Cells
Layer 1 Recharges and Extractions
Clean-up Extractions
Hill and Mountains Recharges
Production/Dewatering Extractions
Spreading Grounds Recharges
Sub-Surface Inflows
Los Angeles River

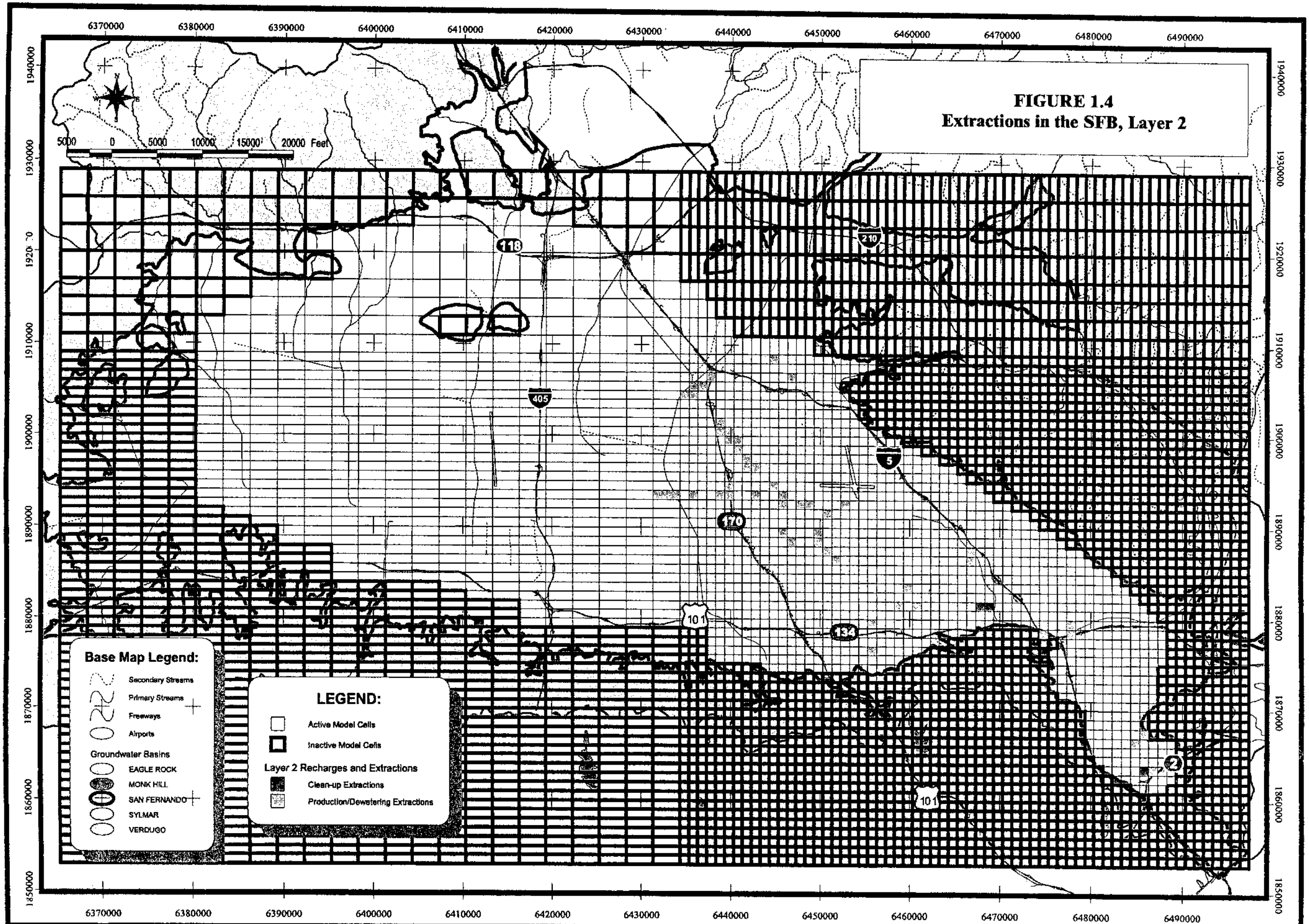
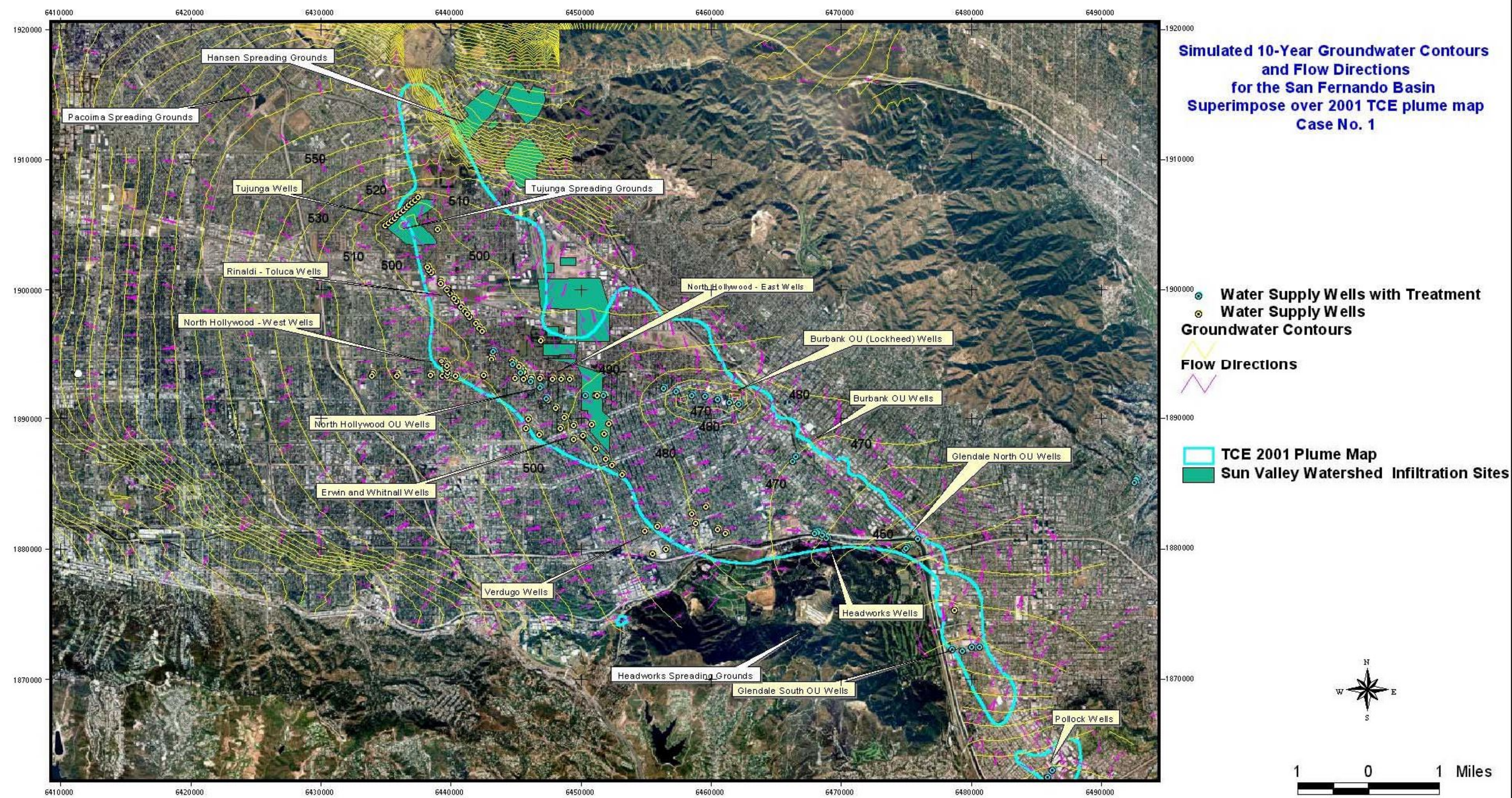


FIGURE 1.4
Extractions in the SFB, Layer 2
Base Map Legend:
Secondary Streams
Primary Streams
Freeways
Airports
Groundwater Basins
EAGLE ROCK
MONK HILL
SAN FERNANDO
SYLMAR
VERDUGO
LEGEND:
Active Model Cells
Inactive Model Cells
Layer 2 Recharges and Extractions
Clean-up Extractions
Production/Dewatering Extractions
5000 0 5000 10000 15000 20000 Feet
118
405
210
5
170
101
134
2
6370000
6380000
6390000
6400000
6410000
6420000
6430000
6440000
6450000
6460000
6470000
6480000
6490000
1940000
1930000
1920000
1910000
1900000
1890000
1880000
1870000
1860000
1850000

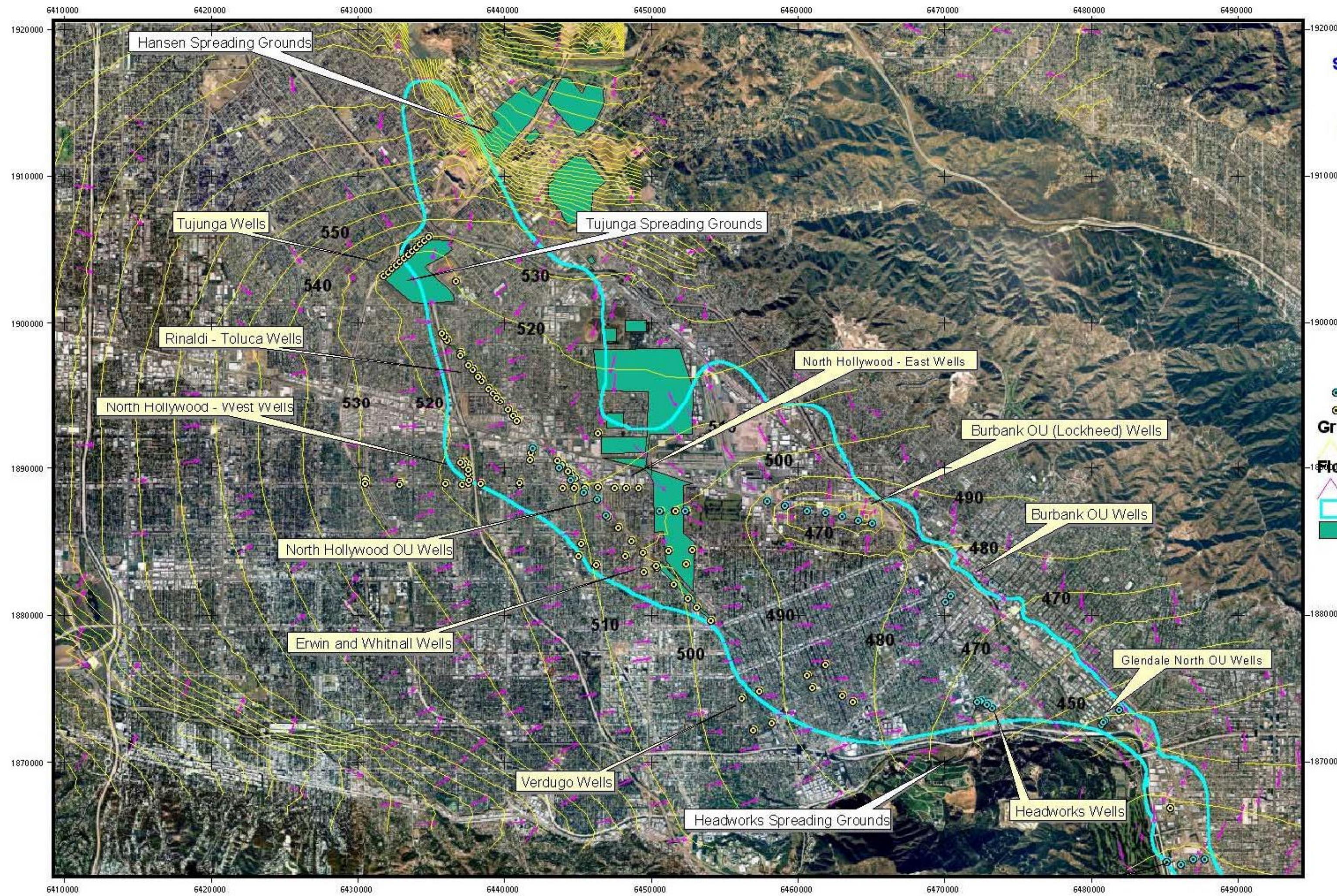
FIGURE 1.5



Simulated 10-Year Groundwater Contours and Flow Directions for the San Fernando Basin Superimpose over 2001 TCE plume map Case No. 1

FIGURE 1.6

Simulated 10-Year Groundwater Contours and Flow Directions for the San Fernando Basin Superimpose over 2001 TCE plume map Assuming Sun Valley Watershed proposed infiltration sites in operation Recharging 8,327 AFY Case No. 2



Water Supply Wells with Treatment
Water Supply Wells
Groundwater Contours
Flow Directions
TCE 2001 Plume Map
Sun Valley Watershed Infiltration Sites

N W E S

1 0 1 Miles

Appendix G
Phase 1 Monitoring Program Summary

Appendix G contains a summary of the monitoring program that has been developed for the five Phase 1 projects of the Sun Valley Watershed Management Plan (Cal Mat Pit, Sun Valley Middle School, Tuxford Green, Vulcan Gravel Processing Plant, and Valley Steam Plant). Details of the proposed Phase 1 monitoring program are presented in the technical memorandum "Monitoring Plan for the Sun Valley Watershed Pilot Program" (See Section 2.9).

The proposed monitoring plan consists of three elements: 1) flood control and water conservation monitoring, 2) stormwater quality monitoring, and 3) groundwater quality monitoring.

Table G-1 summarizes the locations, frequency, and types of measurements proposed under the monitoring program. **Table G-2** presents the constituents proposed for stormwater, groundwater, and vadose zone water quality analyses. During design of each Phase 1 project component, a more detailed monitoring plan will be finalized.

Table G-1
Pilot Projects Monitoring Plan Summary

Monitoring Location / Device	Measurements	Sampling Frequency for Water Quality and Groundwater Levels (per year)
Cal Mat Pit		
Stormwater Influent 1	Flow and Water Quality	≥ 4
Stormwater Influent 2	Flow and Water Quality	≥ 4
Stormwater Influent 3 (Phase 2 only)	Flow and Water Quality	≥ 4
Treated Effluent 1	Water Quality	≥ 4
Water Reuse 1	Flow	N/A
Lysimeter 1	Water Quality	≥ 2
Upgradient Monitoring Well 1	Groundwater Level and Quality	≥ 2
Downgradient Monitoring Well 1	Groundwater Level and Quality	≥ 2
Downgradient Monitoring Well 2	Groundwater Level and Quality	≥ 2
Valley Steam Plant		
Stormwater Influent 1	Flow and Water Quality	≥ 4
Stormwater Influent 2 (Phase 2 only)	Flow and Water Quality	≥ 4
Treated Effluent 1	Water Quality	≥ 4
Treated Effluent 2 (Phase 2 only)	Water Quality	≥ 4
Upgradient Monitoring Well 1	Groundwater Level and Quality	≥ 2
Lysimeter 1	Water Quality	≥ 2
Downgradient Monitoring Well 1	Groundwater Level and Quality	≥ 2
Downgradient Monitoring Well 2	Groundwater Level and Quality	≥ 2
Tuxford Green		
Stormwater Influent 1	Flow and Water Quality	≥ 4
Stormwater Influent 2	Flow and Water Quality	≥ 4
Treated Effluent 1	Water Quality	≥ 4
Water Reuse 1	Flow	N/A
Vulcan Gravel Processing Plant		
Stormwater Influent 1	Flow and Water Quality	≥ 2
Treated Effluent 1	Flow and Water Quality	≥ 2
Water Reuse 1	Water Quality	N/A
Sun Valley Middle School		
Stormwater Influent 1	Flow and Water Quality	≥ 4
Treated Effluent 1	Water Quality	≥ 4
Water Reuse 1	Flow	N/A
Lysimeter 1	Water Quality	≥ 2
Upgradient Monitoring Well 1	Groundwater Level and Quality	≥ 2
Downgradient Monitoring Well 1	Groundwater Level and Quality	≥ 2
Downgradient Monitoring Well 2	Groundwater Level and Quality	≥ 2

Table G-2
Proposed Analytes for Samples of
Stormwater, Groundwater, and Vadose Zone

Analytes	Stormwater	Groundwater	Vadose Zone
General Group*			
pH	✓	✓	✓
Turbidity	✓	✓	✓
Total Dissolved Solids	✓	✓	✓
Total Suspended Solids	✓		
Chemical Oxygen Demand	✓	✓	✓
Oil & Grease	✓	✓	✓
Cadmium	✓	✓	
Copper	✓	✓	✓
Chromium	✓	✓	✓
Chromium VI	✓	✓	✓
Nickel	✓	✓	✓
Zinc	✓	✓	✓
Total Coliform	✓	✓	✓
Fecal Coliform	✓	✓	✓
E. Coli	✓	✓	✓
Total Kjeldahl Nitrogen	✓	✓	✓
Nitrate-Nitrite	✓	✓	✓
Total Ammonia Nitrogen	✓	✓	✓
Total Phosphorus	✓	✓	✓
PCE	✓	✓	✓
TCE	✓	✓	✓
Acetone	✓	✓	✓
Toluene			
Specific Group**			
Aluminum	✓	✓	✓
Antimony	✓	✓	✓
Arsenic	✓	✓	✓
Beryllium	✓	✓	✓
Iron	✓	✓	✓
Lead	✓	✓	✓
Mercury	✓	✓	✓
Streptococcus	✓	✓	✓
Cyanide	✓	✓	
Gross Alpha & Beta	✓	✓	
MTBE		✓	
Organophosphate Pesticides	✓	✓	

Table G-2 (Continued)
Proposed Analytes for Samples of
Stormwater, Groundwater, and Vadose Zone

Analytes	Stormwater	Groundwater	Vadose Zone
Specific Group (continued)**			
Glyphosate	✓	✓	
Benzo (a) anthracene	✓	✓	
Bis (2-ethylhexyl) phthalate	✓	✓	
Fluoranthene	✓	✓	
Pentachlorophenol	✓	✓	
Phenanthrene	✓	✓	
Pyrene	✓	✓	
Chloroform	✓	✓	✓
Chlorodibromomethane	✓	✓	✓
Chlorodichloromethane	✓	✓	✓
Bromoform	✓	✓	✓
Total Trihalomethanes	✓	✓	✓
Methylene Chloride	✓	✓	✓
N-Nitrosodimethylamine (NDMA)	✓	✓	
Phenol	✓	✓	
1,1-Dichloroethylene (1,1-DCE)	✓	✓	✓
1,2-dibromo-3-chloropropane (DBCP)	✓	✓	✓
Methylene Blue Active Substances (MBAS)	✓	✓	
Perchlorate	✓	✓	✓

* The general group includes analytes that are commonly measured in stormwater and groundwater. These analytes are recommended for analysis in all samples taken.

** The specific group includes less commonly measured constituents that have been identified as contaminants of concern in Sun Valley Watershed. These constituents are recommended, at least initially, for analysis in selected samples only.

Appendix H
Comments and Responses

H.1 WRITTEN COMMENTS AND RESPONSES

Table H-1 lists the agencies and organizations who provided written comments on the Draft Program EIR for the Sun Valley Watershed Management Plan. This section presents the comments followed by the LACDPW responses to those comments.

Table H-1
List of Comment Letters

Letter Number	Organization	Commentor
Federal Agency		
1	U.S. Fish and Wildlife Service	Karen Goebel, Assistant Field Supervisor
State Agencies		
2	California Department of Transportation, District 7	Stephen J. Buswell, IGR/CEQA Branch Chief, Regional Planning Office
3	California Department of Fish and Game	C.F. Raysbrook, Regional Manager
4	California Department of Health Services	Vera Melnyk Vecchio, P.E., Chief, Los Angeles Region
5	California Department of Water Resources, Division of Safety of Dams	David A. Gutierrez, Acting Chief
6	Los Angeles Regional Water Quality Control Board	Wendy Phillips, Chief, Storm Water Section
Regional Agencies		
7	ULARA Watermaster 7A – Comments on the EIR 7B – Comments on the WMP	Mark Mackowski, ULARA Watermaster
8	South Coast Air Quality Management District	Steve Smith, Ph.D., Program Supervisor, CEQA Section
9	Southern California Regional Rail Authority	David Solow, Chief Executive Officer
10	Southern California Association of Governments	Jeffrey M. Smith, AICP, Senior Regional Planner, Intergovernmental Review
City of Los Angeles		
11	Department of Water and Power 11A – Comments on the EIR 11B – Comments on the WMP	Thomas M. Erb, Director of Water Resources
12	Department of Environmental Affairs 12A – Comments on the EIR 12B – Comments on the WMP	Detrich B. Allen, General Manager
13	Department of Public Works - Watershed Protection Division	Shahram Kharaghani, Ph.D., P.E., Program Manager
Other Organizations		
14	Los Angeles Unified School District	Christer Loftenius, R.G., C.HG., REA, Environmental Assessment Coordinator
15	Targhee, Inc.	Dave Broadbent, Environmental Consultant
16	Law Offices of John S. Peterson	John S. Peterson
17	TreePeople 17A – Comments on the EIR 17B – Comments on the WMP	Andy Lipkis, Founder and President Rebecca Drayse, T.R.E.E.S. Project Manager

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road
Carlsbad, California 92009

Comment Letter No. 1

In Reply Refer To:
Vik Bapna (FWS-LA-3801.1)

DEC 2 9 2003

Vik Bapna
County of Los Angeles Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, California 91802-1460

Re: Draft Environmental Impact Report for the Sun Valley Watershed Management Plan, Los Angeles County, California

Dear Mr. Bapna:

We have reviewed the Draft Environmental Impact Report (DEIR) for the Sun Valley Watershed Management Plan in Los Angeles County, California. The DEIR was received in our office on October 23, 2003. The DEIR addresses the potential effects of developing a multi-purpose flood control program to solve local flooding problems while increasing water conservation, recreational opportunities, and wildlife habitat, and reducing stormwater pollution. Seventeen individual project components, four County-defined alternatives and three CEQA alternatives are evaluated in the DEIR.

We offer the following comments and recommendations regarding project-associated biological impacts based on our review of the DEIR and our knowledge of declining habitat types and species within Los Angeles County. Specifically, we administer the Endangered Species Act (Act) of 1973, as amended. Section 7 of the Act requires Federal agencies to consult with the Fish and Wildlife Service (Service) should it be determined that their actions may affect federally listed threatened or endangered species. Section 9 of the Act prohibits the "take" (e.g., harm, harassment, pursuit, injury, kill) of federally listed wildlife. "Harm" is further defined to include habitat modification or degradation where it kills or injures wildlife by impairing essential behavioral patterns including breeding, feeding, or sheltering. Take incidental to otherwise lawful activities can be permitted under the provisions of sections 7 (Federal consultations) and 10 of the Act. We also provide comments on public notices issued for a Federal permit or license affecting the Nation's waters pursuant to the Clean Water Act.

1-1 A detailed analysis of project impacts has not been included in the DEIR for most project components; therefore, we are not providing specific project comments at this time. However, we have concerns regarding potential effects to listed species in riparian areas where sediment basins

frequently are placed. In particular, we are concerned about the potential for listed species to occur in the areas that have not previously been surveyed, including the Vulcan Gravel Processing Plant, Cal Mat Pit, Sheldon Pit and Strathern Pit. We recommend that an evaluation of sensitive wildlife
1-1 cont'd on these sites include the threatened coastal California gnatcatcher (*Polioptila californica californica*) in addition to those species identified in the DEIR. Because of the potential for impacts to listed species from this flood control project, we request that copies of all CEQA documents related to the project be forwarded to our office.

We appreciate the opportunity to comment on the referenced DEIR for the Sun Valley Watershed Management Plan. If you should have any questions pertaining to these comments, please contact Christine Medak of my staff at (760) 431-9440.

Sincerely,

Karen A. Goebel

Karen A. Goebel
Assistant Field Supervisor

Responses to Letter No. 1 — Karen Goebel, Assistant Field Supervisor, U.S. Fish and Wildlife Service

1-1 Presence of coastal California gnatcatcher has been reported on a hillside south of Wentworth within a patch of coastal sage scrub habitat, located approximately 0.5 miles east of the New Park on Wentworth project site. This location is separated from the New Park on Wentworth site by residential development. During the field survey for this site, disturbed and remnant coastal sage scrub (a total of approximately 1.5 acres) was found (see EIR p. 4.2-14). EIR Table 4.2-4 (Section 4.2.4.2) has been revised to state that there is very limited potential for coastal California gnatcatcher to occur at the New Park on Wentworth site based on the level of disturbance, isolation by development, and the degraded quality of the coastal sage scrub.

Five other sites (Strathern Pit, Cal Mat Pit, Sheldon Pit, Vulcan Gravel Processing Plant, and Valley Steam Plant) could not be accessed for biological resources survey at this time, as stated on page 4.2-1. Each site was assessed as best as possible by survey from the site perimeter, review of the relevant literature, and interpolation from aerial photographs. As set forth on page 4.2-1, access to the privately-owned gravel facilities (Strathern Pit, Cal Mat Pit, Sheldon Pit, and Vulcan Gravel Processing Plant) was denied by the property owners. Assessments from the site perimeter, review of relevant literature, and interpolation from aerial photographs indicated a limited potential for sensitive habitat types (including coastal sage scrub) to occur at these sites (see revised Table 4.2-4). This EIR is not a project-level review of biological and cultural resources for Strathern Pit, Cal Mat Pit, Sheldon Pit, and Vulcan Gravel Processing Plant; onsite surveys of these sites will be conducted at the time each project component undergoes project-level CEQA review. If future biological resources surveys (as outlined in Mitigation Measures B-3, B-4, and B-5) determine the presence of coastal California gnatcatcher, or other special status vegetation type or species, on Strathern Pit, Cal Mat Pit, Sheldon Pit, or Vulcan Gravel Processing Plant, appropriate mitigation measures will be developed and implemented. EIR Sections 4.2.6 and 4.2.7 have been revised to incorporate this information.

Access to Valley Steam Plant was not logistically possible due to the ongoing construction activities at the site. However, the Valley Steam Plant project component will be located within the boundaries of an existing power generating station, and the site has already been greatly disturbed. As indicated in the Initial Study prepared for the Los Angeles Department of Water and Power's Installation of a Combined Cycle Generating Facility at the Valley Generating Station (Appendix to SCAQMD, 2002a), the Valley Steam Plant site does not support sensitive biological resources, including riparian habitat, wetlands, migratory corridors, and special status plants, animals or natural communities. EIR Section 4.2.1 has been revised to incorporate this information.

Copies of subsequent CEQA documents for project components where biological review was not completed will be provided to the U.S. Fish and Wildlife Service at the time each project is undergoing project-level CEQA review.

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DEPARTMENT OF TRANSPORTATION
DISTRICT 7, REGIONAL PLANNING
IGR/CEQA BRANCH
120 SO. SPRING ST.
LOS ANGELES, CA 90012
PHONE (213) 897-6536
FAX (213) 897-1337
E-Mail:NersesYerjanian@dot.ca.gov

Comment Letter No. 2

Flex your power!
Be energy efficient!

Mr. Vik Bapna
LA County Dept. of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA. 91802-1460

IGR/CEQA # 031072NY
DEIR/Sun Valley Watershed Management Plan
LA / Various locations

October 29, 2003

Dear Mr. Bapna:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the proposed development of Sun Valley Watershed Management Plan in Los Angeles County.

2-1 We would like to remind you that any transportation of heavy construction equipment and/or materials which requires the use of oversized-transport vehicles on State highways will require a Caltrans transportation permit.
2-2 We recommend that large size truck trips be limited to off-peak commute periods.

2-3 Storm water run-off is a sensitive issue for Los Angeles and Ventura counties. Please be mindful of your need to discharge clean run-off water.
2-4 An Encroachment Permit from the Department of Transportation may be needed for this project. Any encroachment into, on or over State right-of-way needs a Department Encroachment Permit. Please prepare and submit engineering plans including drainage plans, for our review so we can determine whether an encroachment exists.

If you have any questions regarding this response, please call the Project Engineer/Coordinator Mr. Yerjanian at (213) 897-6536 and refer to IGR/CEQA # 031072NY.

Sincerely,

Stephen J. Buswell

STEPHEN J. BUSWELL
IGR/CEQA Branch Chief
Regional Planning Office
Caltrans, District 7

Responses to Letter No. 2 **Stephen Buswell, IGR/CEQA Branch Chief**
California Department of Transportation, District 7

2-1 Prior to the start of construction, if it is determined that oversized or overweight vehicles as defined by the California Vehicle Code will be required, the contractor will submit an application for a Caltrans transportation permit. Please note that EIR Table 2-2 (Section 2.4.2) and Mitigation Measure T-7 (Section 4.11.6) refer to this potential permit.

2-2 As described in Mitigation Measure T-1 (EIR Section 4.11.6), a construction traffic management plan will be developed for each project site. The construction traffic management plan will include travel time restrictions for construction-related traffic to avoid weekday peak periods on selected roadways.

2-3 One of the project objectives of the Watershed Management Plan is the improvement of water quality (EIR Section 1.2). As described in Mitigation Measure W-1 (EIR Section 4.7.7), stormwater runoff during construction of the project elements will be handled properly and in accordance with NPDES stormwater permits for construction sites over 1 acre (all project components except on-site BMPs and Tree Planting and Mulching).

2-4 Implementation of the Watershed Management Plan component at Tuxford Green (and potentially portions of storm drains) could encroach on State right-of-way. As listed in EIR Table 2-2 (Section 2.4.2), application for an encroachment permit (with engineering plans, including drainage plans) will be submitted to Caltrans prior to construction at Tuxford Green and any relevant portions of proposed storm drains.

State of California - The Resources Agency
ARNOLD SCHWARZENEGGER, *Governor*

DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
4949 Viewridge Avenue
San Diego, CA 92123
(858) 467-4201

Comment Letter No. 3

December 8, 2003

Flex Your Power

BY FACSIMILE AND U.S. MAIL

Mr. Vik Bapna
County of Los Angeles Department of Public Works
P.O. Box 1460
Alhambra, CA 91802-1460
Fax No.: (626) 457-1526

Draft Programmatic Environmental Impact Report for
Sun Valley Watershed Management Plan
SCH# 2002111051, Los Angeles County

Dear Mr. Bapna:

The Department of Fish and Game (Department) appreciates this opportunity to comment on the draft Programmatic Environmental Impact Report (PEIR) for the above referenced proposed project relative to impacts to biological resources. The project proposal consists of a Watershed Management Plan (Plan) for the Sun Valley Watershed to be implemented within the communities of Sun Valley and North Hollywood, City of Los Angeles. The Plan is designed as a flood control blue print which will resolve local flooding problems while increasing water conservation, recreational opportunities and wildlife habitat and reducing storm water pollution.

The following statements and comments have been prepared pursuant to the Department's authority as Trustee Agency with jurisdiction over natural resources affected by the project (CEQA Section 15386) and pursuant to our authority as a Responsible Agency under CEQA Section 15381 over those aspects of the proposed project that come under the purview of the California Endangered Species Act (Fish and Game Code Section 2050 et seq) and Fish and Game Code Section 1600 et seq.:

Impacts to Biological Resources

1. Storm Water Treatment Wetlands/Detention Ponds – The Plan includes elements described as improvement projects including constructed wetlands and detention ponds designed to remove sediments and pollutants from storm water runoff within the project area.

3-1

   a. The Department considers wetlands a valuable wildlife asset but cautions that storm water treatment wetlands and detention basins may concentrate wildlife into areas of poor water quality and therefore do not necessarily provide a long term benefit for wildlife. This concern should be addressed in the PEIR.

2. Special Status Species – The PEIR discusses potential project related impacts to special status wildlife species.

3-2 a. Plan areas supporting coastal sage scrub should be evaluated for habitat suitability for the federally threatened California gnatcatcher (CGC). Suitability for CGC and potential impacts and mitigation measures were not discussed in the PEIR.

3-3 b. Habitat suitability for the San Diego black-tailed jackrabbit, a California Species of Special Concern, should be evaluated along with described impacts and mitigation measures.

3-4 c. Under CEQA the Lead Agency shall declare a mandatory finding of significance and prepare an EIR for projects which will have the potential to restrict the number or reduce the range of an endangered, rare or threatened species (CEQA Guidelines Section 15065). Species considered California Species of Special Concern (CSC) also meet the CEQA definition of rare, threatened, or endangered species (CEQA Guidelines, Section 15380).

Mitigation Measures

1. Improvement Projects – The Plan describes the use of storm water treatment wetlands and detention basins as water quality improvement projects which may be implemented within the plan area.

3-5 a. Storm water treatment wetlands and detention basins which also require periodic cleaning should not be proposed for mitigation for adverse project related impacts to riparian and/or other wetland habitats due to questionable water quality and periodic elimination of habitat from maintenance activities.

2. Special Status Vegetative Types - The PEIR proposes a 1:1 mitigation ratio for restoration of the unavoidable loss of high value vegetation types such as coastal sage scrub and Riversidian alluvial fan scrub which may be impacted by the project.

3-6 a. The Department recommends a mitigation ratio greater than 1:1 to mitigate for the temporal loss of habitat while mitigation areas develop and mature. The Department recommends a 2:1 mitigation ratio for loss of CGC unoccupied coastal sage scrub and as high as 5:1 for the loss of Riversidian alluvial fan sage scrub depending on the quality of the habitat impacted by the proposed project. Mitigation may include avoidance and protection in perpetuity of on site habitat and/or off site acquisition and protection in perpetuity of habitat of similar or superior quality.

3-7 3. Native Nesting Birds - Project impacts on nesting native birds should be evaluated at all proposed project locations which support nesting habitat including native/ornamental landscaping, ground substrates and man made structures. The proposed project may result in removal and/or disturbance of nesting habitat and therefore has the potential to directly impact nesting native bird species.

a. Migratory nongame native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918(50 C.F.R. Section 10.13). Sections 3503, 3503.5 and 3513 of the California Fish and Game

Code prohibit take of all birds and their active nests including raptors and other migratory nongame birds (as listed under the Federal MBTA).

b. Proposed project activities (including disturbances to native and non-native vegetation and man-made nesting substrates) should take place outside of the breeding bird season which generally runs from March 1- August 31 (as early as February 1 for raptors) to avoid take (including disturbances which would cause abandonment of active nests containing eggs and/or young). Take means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill (Fish and Game Code Section 86).

3-7 cont'd

c. If the project activities cannot feasibly avoid the breeding bird season, the Department recommends that beginning thirty days prior to the disturbance of suitable nesting habitat the project proponent should arrange for weekly bird surveys to detect any protected native birds in the habitat to be removed and any other such habitat within 300 feet of the construction work area (within 500 feet for raptors). The surveys should be conducted by a qualified biologist with experience in conducting breeding bird surveys. The surveys should continue on a weekly basis with the last survey being conducted no more than three days prior to the initiation of clearance/construction work. If a protected native bird is found, the project proponent should delay all clearance/ construction disturbance activities in suitable nesting habitat or within 300 feet of nesting habitat (within 500 feet for raptor nesting habitat) until August 31 or continue the surveys in order to locate any nests. If an active nest is located, clearing and construction within 300 feet of the nest (within 500 feet for raptor nests) shall be postponed until the nest is vacated and juveniles have fledged and when there is no evidence of a second attempt at nesting. Limits of construction to avoid a nest should be established in the field with flagging and stakes or construction fencing. Construction personnel should be instructed on the sensitivity of the area. The project proponent should record the results of the recommended protective measures described above to document compliance with applicable State and federal laws pertaining to the protection of native birds.

Impacts to Riparian Resources

3-8

1. Drainages - It is not clear in the PEIR what specific impacts to drainages will occur, if any, as the result of the proposed project. All drainages should be avoided and provided with substantial setbacks which preserve their value to on-site and off-site wildlife populations.

3-9

a. The Department requires a Streambed Alteration Agreement (SAA), pursuant to Section 1600 et seq. of the Fish and Game Code, with the applicant prior to any direct or indirect impact (including preliminary geotechnical activities) of a lake or streambed, bank or channel or associated riparian resources. The Department's issuance of a SAA is considered a project that is subject to CEQA. To facilitate our issuance of the Agreement, the Department as a responsible agency under CEQA may consider the local jurisdiction's (lead agency) document for the project. To minimize additional requirements by the Department under CEQA the document should fully identify the potential impacts to any lake, stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of

3-9 cont'd the Agreement. Early consultation is recommended, since modification of the proposed project may be required to avoid or reduce impacts to fish and wildlife resources. Please contact Ms. Betty Courtney, Environmental Specialists III, at (661) 263-8306 to discuss this further.

In conclusion, the Department recommends that the above concerns are addressed prior to lead agency approval of the proposed project.

Thank you for this opportunity to provide comment. Questions regarding this letter and further coordination on these issues should be directed to Mr. Scott Harris, Associate Wildlife Biologist, at (626) 797-3170.

Sincerely,

FOR C. F. Raysbrook
Regional Manager

cc: Ms. Morgan Wehtje, Camarillo
Mr. Scott Harris, Mission Hills
Ms. Betty Courtney, Newhall
CFR-Chron; HCP-Chron
Department of Fish and Game

State Clearinghouse
Sacramento

SPH:sph/sl
sphams\PEIRSunValley Watershed MGT Plan.doc

Responses to Letter No. 3 C.F. Raysbrook, Regional Manager California Department of Fish and Game

3-1 Given the highly urbanized nature of the Sun Valley Watershed, implementation of the proposed project components is anticipated to have a long-term benefit on wildlife. The project will not displace existing habitat areas with high quality water sources and replace them with wetlands of lower quality water. The project will provide new areas of habitat where either none exists or where very low quality, disturbed habitat currently is present. EIR Section 4.2.6.2 (Operational Impacts on Biological Resources) has been revised to incorporate the above information. As described in Section 4.7.2.3, stormwater quality is highly variable depending on factors such as climate, season, drainage area land use, and sequence and duration of storm events. Stormwater treatment and water quality monitoring will be incorporated into the project (EIR Sections 4.7.4 and 4.7.7 – Mitigation Measure W-2). Mitigation Measure W-2, and the comprehensive stormwater and groundwater quality monitoring program for the Phase 1 projects set forth in Section 3.6.1 of the EIR, work together to provide for monitoring of the quality of water retained at each of the Phase 1 projects, as well as other future Plan projects. The results of this monitoring will be used to guide future project components, and will be used to determine whether there is a need to modify treatment at the Phase 1 projects, to adequately protect water quality as well as wildlife. Please note that Mitigation Measures W-2 has been revised to incorporate water quality concerns related to wildlife.

3-2 Presence of coastal California gnatcatcher has been reported on a hillside south of Wentworth within a patch of coastal sage scrub habitat, located approximately 0.5 miles east of the New Park on Wentworth project site. This location is separated from the New Park on Wentworth site by residential development. During the field survey for this site, disturbed and remnant coastal sage scrub (a total of approximately 1.5 acres) was found (see EIR p. 4.2-14). EIR Table 4.2-4 (Section 4.2.4.2) has been revised to state that there is very limited potential for coastal California gnatcatcher to occur at the New Park on Wentworth site based on the level of disturbance, isolation by development, and the degraded quality of the coastal sage scrub.

Five other sites (Strathern Pit, Cal Mat Pit, Sheldon Pit, Vulcan Gravel Processing Plant, and Valley Steam Plant) could not be accessed for biological resources survey at this time, as stated on page 4.2-1. Each site was assessed as best as possible by survey from the site perimeter, review of the relevant literature, and interpolation from aerial photographs. As set forth on page 4.2-1, access to the privately-owned gravel facilities (Strathern Pit, Cal Mat Pit, Sheldon Pit, and Vulcan Gravel Processing Plant) was denied by the property owners. Assessments from the site perimeter, review of relevant literature, and interpolation from aerial photographs indicated a limited potential for sensitive habitat types (including coastal sage scrub) to occur at these sites (see revised Table 4.2-4). This EIR is not a project-level review of biological and cultural resources for Strathern Pit, Cal Mat Pit, Sheldon Pit, and Vulcan Gravel Processing Plant; onsite surveys of these sites will be conducted at the time each project component undergoes project-level CEQA review. If future biological resources surveys (as outlined in Mitigation Measures B-3, B-4, and B-5) determine the presence of coastal California gnatcatcher, or other special status vegetation type or species, on Strathern Pit, Cal Mat Pit, Sheldon Pit, or Vulcan Gravel Processing Plant, appropriate mitigation measures will be developed and implemented. EIR Sections 4.2.6 and 4.2.7 have been revised to incorporate this information.

Access to Valley Steam Plant was not logistically possible due to the ongoing construction activities at the site. However, the Valley Steam Plant project component will be located within the boundaries of an existing power generating station, and the site has already been greatly disturbed. As indicated in the Initial Study prepared for the Los Angeles Department of Water and Power's Installation of a Combined Cycle Generating Facility at the Valley Generating Station (Appendix to SCAQMD, 2002a), the Valley Steam Plant site does not support sensitive biological resources, including riparian habitat, wetlands, migratory corridors, and special status plants, animals or natural communities. EIR Section 4.2.1 has been revised to incorporate this information.

Copies of subsequent CEQA documents for project components where biological review was not completed will be provided to CDFG at the time each project is undergoing project-level CEQA review.

3-3 Based on the information in your comment letter, Table 4.2-4 (EIR Section 4.2.4.2) has been revised to indicate that the San Diego black-tailed jackrabbit has very limited to limited potential to occur at some of the project component sites based on the level of disturbance and the isolation from other potential habitat by development. Future biological resources surveys (as outlined in Mitigation Measures B-3, B-4, and B-5) will determine the presence of jackrabbit on any of the unsurveyed project sites at the time of project-level review. However, potential impacts to this species from a minor and incremental loss of habitat would represent a less than significant impact. Please note that implementation of Mitigation Measures B-1 and B-2 to address potential impacts on high value vegetation types would result in restoration of habitat with some potential to support this species.

3-4 As noted in EIR Section 4.2.5, Section 15380 of CEQA indicates that a lead agency can consider a non-listed species to be endangered, rare, or threatened for the purposes of CEQA if the species can be shown to meet the criteria in the definition of rare or endangered. For the purposes of EIR analysis for this project, the current scientific knowledge on the population size and distribution for each special status species was considered in determining if a non-listed species met the definitions for rare and endangered according to Section 15380 of CEQA. Numerous California Species of Special Concern were considered (Table 4.2-4) as were plants with California Native Plant Society 1B status (Table 4.2-3).

3-5 Adverse project impacts to riparian and/or other wetland habitats have not been identified for the proposed project. However, field surveys were not possible at four project sites (field survey at one project site, Valley Steam Plant, was conducted by others) and therefore presence of wetland habitats cannot be excluded for these locations. If, upon project-level CEQA review, these unsurveyed project sites are found to contain wetland habitats, and if project implementation would adversely impact these habitats, mitigation will be implemented as outlined in Mitigation Measure B-2. The habitat value of the proposed wetland features is anticipated to be vastly greater than remnant wetland areas (if any) potentially occurring at the unsurveyed sites with industrial land uses (gravel pits). As part of Mitigation Measure B-2, disturbance of created wetlands during maintenance (e.g., sediment removal) will be considered in determining the acreage of created wetlands necessary to mitigate impacts to existing wetlands, if any. Please also see response to Comment No. 3-1.

3-6 EIR Section 4.2.7 has been revised to indicate that mitigation ratios of 1:1 are the minimum ratios proposed. Site-specific ratios will be determined in consultation with CDFG if results of future surveys determine that special status habitat types will be adversely affected by project construction.

3-7 EIR Sections 4.2.3 and 4.2.6.1 have been revised to reference the Federal Migratory Bird Treaty Act. The presence or absence of nesting birds protected by the Migratory Bird Treaty Act would vary at each location from year to year. As requested by CDFG, EIR Section 4.2.7 has been revised to add a new mitigation measure (B-5) to address potential impacts to birds protected by the Migratory Bird Treaty Act. This measures calls for construction work to be conducted outside of the nesting period or for pre-construction surveys for nesting birds to be conducted at New Park on Wentworth, Sheldon Pit, Strathern Pit, Cal Mat Pit, and Vulcan Gravel Processing Plant).

3-8 The only project component with the potential to alter an existing drainage channel is the Tujunga Wash Diversion portion of the Sheldon Pit project component (EIR Section 3.4.7). Under this project component, a section of the Tujunga Wash concrete channel bottom would be lowered by approximately 10 feet to capture a portion of the storm flows that bypass the existing diversion to Hansen Spreading Grounds. Additional channel modifications may be necessary upon further hydrologic analysis. Modification of this concrete-lined channel is integral to this project component, as it would provide approximately 6,000 acre-feet of water for infiltration into Sheldon Pit.

As summarized in EIR Section 4.2.1, the existing concrete-lined channel of Tujunga Wash contains very limited biological resources. Therefore, the proposed modification of the channel would not have any substantial impact on biological resources.

3-9 The only proposed Watershed Management Plan component that would impact a channel is the Tujunga Wash Diversion portion of the Sheldon Pit component. A Streambed Alteration Agreement from CDFG is not expected to be required to implement this component since it is within the concrete-lined portion of the Tujunga Wash channel. This is consistent with existing County maintenance and construction projects in concrete-lined channels where CDFG has indicated that Streamed Alteration Agreements are not required. Please note that the proposed modification of the channel would not have any substantial impact on biological resources.

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State of California—Health and Human Services Agency

Department of Health Services

California Department of Health Services

DIANA M. BONTÁ, R.N., Dr. P.H.
Director

ARNOL) SCHWARZENEGGER
Governor

December 11, 2003

Comment Letter No. 4

Mr. Vik Bapna
Senior Civil Engineer
County of Los Angeles Department of Public Works
Watershed Management Division
P.O. Box 1460, Alhambra, CA 91802-1460

Dear Mr. Bapna:

COMMENTS ON DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT FOR THE SUN VALLEY WATERSHED MANAGEMENT PLAN, SCH # 2002111051

4-1 The California Department of Health Services (CDHS), Southern California Drinking Water Field Operations Branch has reviewed the Draft Program Environmental Impact Report (Program EIR) for the Sun Valley Watershed Management Plan (the Plan). Unfortunately, though we understand that the County of Los Angeles Department of Public Works (LACDPW) did submit a copy of the Program EIR for review by CDHS, this office never received the document. Therefore, we respectfully request that you consider our comments on the Program EIR even though the public review period closed on December 8.

CDHS is responsible for the enforcement of the federal and California Safe Drinking Water Acts and the regulatory oversight of public water systems to assure the delivery of safe drinking water to all Californians. We are, therefore, concerned with any project that may affect sources of drinking water in California. By reducing the amount of polluted runoff entering area storm drains, the Plan has the potential to substantially improve water quality in local estuaries and beaches. In addition, the Plan may provide a benefit to local water producers by augmenting the groundwater supply. However, if contaminant levels are not properly controlled and monitored, the infiltration of storm runoff can also degrade groundwater quality. To minimize this threat, the project must provide for adequate treatment of runoff and continued oversight of the effect on local groundwater. To this end, we offer the following comments.

4-2 1. Sheldon Pit has been excavated below the water table, exposing groundwater in a portion of the pit. Section 4.7.4.3 of the Program EIR states, "Gravel wash

Southern California Drinking Water Field Operations Branch, Los Angeles Region
1449 West Temple Street, Room 202, Los Angeles, CA, 90026
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Internet Address: www.dhs.ca.gov/ps/ddwem/

wastewater from the Vulcan Gravel Processing Plant is currently discharged with minimal pretreatment into the portion of Sheldon Pit that has exposed groundwater; this practice is expected to continue after implementation of the project." The Plan proposes the use of stormwater to supplement the existing sources of gravel wash water; the stormwater would constitute no more than 20 percent of the total wash water. The stormwater could include a significant portion of industrial runoff, and would be pre-treated through separation devices, sedimentation basins, and constructed wetlands.

4-2 cont'd

CDHS believes that any non-potable discharge to exposed groundwater poses a threat to groundwater quality. The current wash water disposal practices at Sheldon Pit are cause for concern, and the addition of stormwater, even after the proposed treatment, would exacerbate this risk. Alternatively, the Plan could provide an opportunity to eliminate the existing threat by proposing a more appropriate location for disposing of Vulcan's wash wastewater. CDHS encourages LACDPW to explore alternatives to wash water disposal at Sheldon Pit. Such a course would be necessary, in any case, if the monitoring proposed in Mitigation Measure W-2 reveals significant impairment of groundwater.

2. The Plan proposes to infiltrate runoff from commercial, industrial, and residential areas. Industrial runoff, in particular, may contain contaminants with high solubility and mobility; without adequate treatment, such contaminants are likely to reach and persist in groundwater. The Program EIR lists a number of treatment options for project water, including trash screens, separation devices, proprietary treatment filters, sedimentation basins, constructed wetlands, vegetated buffers, infiltration through soils, and disinfection. Most of these treatment techniques rely on particulate removal to capture contaminants, which should significantly decrease the contaminant load. Dissolved constituents, however, including some portion of metals and organics, are likely to survive the pre-infiltration treatment. Therefore, treatment in the vadose zone itself is a critical component of the groundwater protection strategy.

4-3

Many of the proposed infiltration sites have a depth to groundwater greater than 100 feet, which should provide significant contaminant removal in the vadose zone. A large percentage of the infiltration, however, would occur at gravel pits, which have been excavated much closer to the water table. Soils in the project area consist primarily of coarse materials, which are relatively inefficient in removing contaminants; consequently, as the depth to groundwater decreases, the potential for vadose zone treatment is dramatically reduced. At the gravel pit sites, infiltration itself is likely to increase local groundwater levels, further reducing the margin of safety. Therefore, pre-infiltration treatment at these sites, 4-3 cont'd including constructed wetlands, should be carefully engineered and operated to maximize contaminant removal. 4-4 Additionally, Mitigation Measure W-3 proposes an "alert level" for groundwater elevation below the Bradley Landfill; a similar measure should be implemented at the gravel pit infiltration sites.

3. 4-5 Ultimately, the protection of groundwater in the project area depends on a comprehensive vadose zone and groundwater quality monitoring program. CDHS has not reviewed the "Monitoring Plan for the Sun Valley Watershed Pilot Program." Therefore, we offer the following, general comments regarding water quality monitoring for the proposed project:

- Before the Plan is implemented, monitoring should be conducted to establish baseline ranges for contaminants associated with urban runoff. Both the vadose zone and the groundwater should be characterized.
- For each constituent of concern, the monitoring plan should specify monitoring locations, frequencies, trigger levels for increased monitoring or corrective action, and duration of monitoring, where applicable.
- The monitoring plan, or a separate operations contingency plan, should outline the response if a trigger level is exceeded. The plan should identify which agencies will review monitoring data and who will respond to trigger level exceedances.
- San Fernando Basin groundwater is an important source of drinking water for the Los Angeles area. For downgradient monitoring, trigger levels should be set at or below drinking water standards. If baseline monitoring indicates that certain contaminants already exceed drinking water standards, the trigger levels for those contaminants should be set near the upper limit of their expected background range. The monitoring plan should specify laboratory methodology and detection limits that are consistent with the drinking water standards.
- Downgradient monitoring wells should be located sufficiently close to infiltration sites to prevent excessive dilution of infiltrated stormwater and to allow a timely response if trigger levels are exceeded.

Mr. Vik Bapna
Page 4
December 11, 2003

4-6 Thank you for the opportunity to review the Program EIR for the Sun Valley Watershed Management Plan. As a final note, though we have not reviewed any prior environmental documents associated with the Plan, we have reviewed responses to the Notice of Preparation of a Draft Environmental Impact Report and Initial Study submitted by the Los Angeles Department of Water and Power (December 6, 2002) and the Los Angeles Regional Water Quality Control Board (December 24, 2002). We concur with the comments provided by both agencies, and encourage their continued, close participation in the project. If you have any questions, please contact Mr. Stefan Cajina of my staff at (213) 580-3127.

Sincerely,

Vera Melnyk Vecchio

Vera Melnyk Vecchio, P.E., Chief
Los Angeles Region

cc: State Clearinghouse
Governor's Office of Planning and Research
P.O. Box 3044
Sacramento, CA 95812-3044

SDWSRF-Environmental Coordinator
Drinking Water Program
Technical Programs Branch
1616 Capitol Avenue, MS 7416, PO Box 997413
Sacramento, CA 95899-7413

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

Thomas M. Erb
City of Los Angeles Department of Water and Power
Box 51111
Los Angeles, CA 90051-0100

Responses to Letter No. 4 **Vera Melnyk Vecchio, P.E., Chief, California Department of Health Services, Los Angeles Region**

4-1 LACDPW has reviewed and considered all comments on the Draft Program EIR submitted by CDHS.

4-2 Under the proposed project design, Sheldon Pit will be filled (with clean fill soils) to approximately 70 feet below street level, which would be approximately 90 feet above existing groundwater levels at this location. Therefore, after project implementation, groundwater will not be exposed at Sheldon Pit. EIR Sections 3.4.7, 4.7.4.3, and 4.7.6.3.4 have been revised to incorporate this information and to clarify that stormwater infiltration and gravel wash water disposal will not occur in areas of exposed groundwater after project implementation. In addition, Section 4.7.4.3 has been revised to clarify that under the existing practice, the gravel wash water does not come in contact with oil, grease, solvents, or other chemicals. With creation of this vadose zone layer at Sheldon Pit, infiltration of stormwater is not anticipated to result in significant impacts to groundwater quality. Since the design of the Sheldon Pit project component calls for filling as described above, alternatives are not required and have not been analyzed.

4-3 LACDPW concurs with DHS that stormwater infiltration facilities at gravel pit sites would need to be carefully engineered and operated. Specific stormwater treatment systems for individual project components will be selected based on site-specific conditions (including depth to groundwater and drainage area land use) and on the results of monitoring programs conducted for the Phase 1 projects. The general aim of the Watershed Management Plan will be to provide sufficient stormwater treatment to ensure that the quality of water infiltrated under the project is equal or higher than existing groundwater. As described in Mitigation Measure W-2 (EIR Section 4.7.7), the necessity for additional stormwater treatment will be determined in coordination with stakeholders. Please also note that treatment methods other than sedimentation (e.g., filtration for metals removal) may also be implemented as necessary (see Section 4.7.4.1).

4-4 Analysis of impacts on groundwater levels due to project infiltration was conducted by LADWP using a hydrologic model (EIR Section 4.7.6.3.3). Modeling results showed that, overall, the infiltration proposed by the project would have minimal impact on groundwater levels and flow direction. Alert levels for the gravel pit locations with infiltration are not deemed necessary due to the adequate depths of the vadose zones to be provided (approximately 90 feet at Sheldon and approximately 75 feet at Cal Mat pit as compared with a modeled groundwater elevation change after 10 years of up to approximately 20 feet). An alert level at Strathern Pit is not relevant since the proposal includes lining the stormwater retention area.

Based on the groundwater modeling results, project infiltration is not expected to inundate landfill materials in the project area. However, based on comments received from DHS as well as the Regional Board, ULARA Watermaster, LADWP, and City of

Los Angeles Environmental Affairs Department, an additional mitigation measure (W-4, EIR Section 4.7.7) has been incorporated to establish an "alert level" for groundwater elevation below project sites located adjacent to landfills to prevent inundation of landfill materials from infiltrated stormwater.

4-5 Prior to implementation of project components, baseline runoff quality and subsurface conditions will be characterized (including Phase I ESA and geotechnical analysis). Monitoring programs for individual project components will be developed concurrently with project design based on site-specific conditions. Monitoring requirements will be reflective of the anticipated stormwater quality based on drainage area land use.

The monitoring program for the Sun Valley Park Pilot Project (see EIR Section 5.2.1) includes: surface water quality monitoring (upstream and downstream of treatment devices for a total of three locations), groundwater monitoring wells (one upgradient and two downgradient from the project site), and lysimeters (three for each retention basin for a total of six). Parameters to be monitored include: TPH gasoline, TPH diesel, and dissolved metals for groundwater; and VOCs, nitrogen, phosphorus-containing pesticides, chlorophenoxy herbicides, and nitrate and nitrite for vadose zone. For the first two years of project implementation, samples will be taken for every storm event.

The results of the monitoring program for the Sun Valley Park Pilot Project will be considered during development of subsequent monitoring programs. If impacts to groundwater quality are not observed, monitoring for later project components may be substantially reduced.

Monitoring programs will specify sampling site locations, frequency, parameters to be monitored, laboratory methodology and detection limits, and the party responsible for the monitoring program and contingency actions (e.g., cease infiltration). Downgradient monitoring wells will be located sufficiently close to infiltration sites so that the impact of project infiltration on groundwater quality can be characterized. The overall goal of the monitoring program will be to ensure that the quality of water infiltrated under the project is equal or higher than existing groundwater.

4-6 LACDPW will continue to coordinate with all Sun Valley Watershed stakeholders, including the Regional Board and LADWP. Please also see responses to comment letters No. 6 (Regional Board) and No. 11 (LADWP).

... OF CALIFORNIA – THE RESOURCES AGENCY

ARNOLD SCHWARZENEGGER, *Governor*

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

Comment Letter No. 5

DEC 3 2003

Mr. Vik Bapna
County of Los Angeles Department of Public Works
Watershed Management Division
Post Office Box 1460
Alhambra, California 91802-1460

Draft Sun Valley Watershed Management Plan, October 2003
Los Angeles County

Dear Mr. Bapna:

The Division of Safety of Dams has reviewed the Draft Sun Valley Watershed Management Plan.

5-1

Based on the information provided, we find that the proposed detention basin may be under State jurisdiction for safety. Sections 6002 and 6003 of the California Water Code define dams as structures that are 25 feet or higher, measured from the lowest point at the downstream toe to the maximum reservoir storage elevation, with a reservoir storage capacity of more than 15 acre-feet or structures higher than 6 feet with a storage capacity of 50 acre-feet or more.

If the proposed dam is under the State jurisdiction, an application, together with plans and specifications, must be filed with the Division for construction of the new dam. All dam safety issues must be resolved prior to the approval of the application. Design and construction of the dam must be performed under the direction of a civil engineer registered in California. The Acting Design Engineering Branch Chief is responsible for the application approval process and can be reached at (916) 227-4660.

5-1
cont'd If you have any questions, please contact Office Engineer Chuck Wong at (916) 227-4601 or Regional Engineer Mutaz Mihyar at (916) 227-4600.

Sincerely,

David A. Gutierrez, Acting Chief
Division of Safety of Dams

cc: Ms. Nadell Gayou
Resources Agency Project Coordinator
Environmental Review Section, DPLA
901 P Street
Sacramento, California 95814

Responses to Letter No. 5 **David A. Gutierrez, Acting Chief**
California Department of Water Resources,
Division of Safety of Dams

5-1 EIR Section 4.6.2.2 summarizes the Department of Water Resources Division of Safety of Dams definition of dam structures. As stated in EIR Section 4.6.5.3, structures proposed as part of project components at Strathern Pit, Cal Mat Pit, Sheldon Pit, Valley Steam Plant, Vulcan Gravel Processing Plant, and the Power Line Easement will be reviewed against Division criteria at the time that project-level review of each of these projects, or any other component projects with the potential for a dam, is undertaken. If the proposed structures are determined to be jurisdictional dams, LACDPW will file plans and specifications for the relevant project elements with the Division (see also Table 2-2, Section 2.4.2).

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Terry Tamminen
Secretary for Environmental Protection

California Regional Water Quality Control Board
Los Angeles Region

Over 51 Years Serving Coastal Los Angeles and Ventura Counties
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Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: http://www.swrcb.ca.gov/rwqcb4

Arnold Schwarzenegge
Governor

Comment Letter No. 6

December 8, 2003

Mr. Vik Bapna
Watershed Management Division
County of Los Angeles Department of Public Works
PO Box 1460
Alhambra, California 91802-1460

via FAX

Dear Mr. Bapna:

Re: Sun Valley Watershed Management Plan: Draft Program Environmental Impact Report, dated October 2003 (SCH No. 2002111-51)

6-1 Thank you for sending a Draft Program Environmental Impact Report (EIR) for the Sun Valley Watershed Management Plan. In our role as a responsible agency under CEQA, staff at the Regional Water Quality Control Board for the Los Angeles Region (Board) have reviewed your EIR, and commend you for leading this effort to design and implement an integrated storm water management plan for Sun Valley (hereafter, the project).

6-2 We disagree with your finding that the impact from the project to water quality will be less than significant after incorporation of your mitigation measures, and feel that further mitigation is needed, as discussed below.

6-3 **Need for Water Quality Treatment:** The preferred and alternative projects rely heavily upon source control and a passive treatment system. However, existing levels of pollutants are relatively high – see Figure 4.7-2 and Table 4.7-5 (pages 4.7-12 and 4.7-13) in the EIR. In general, source control, as specified in the County of Los Angeles' and City of Los Angeles' Storm Water Management Plans (SMPs), is poorly implemented among industrial and commercial facilities in Sun Valley. And the passive treatment system relies upon a combination of sedimentation basins, infiltration, and dilution with gravel wash water. However, the hydrogeology of Sun Valley is different from most areas, and the project proponents should not rely upon the normal degree of pollutant attenuation from unsaturated flow, due to the coarseness of the sediments. And, with ground water exposed at the Sheldon Pit, there will be not opportunity for attenuation from unsaturated flow. Furthermore, we are concerned about the reliance on gravel wash water – which itself is exposed to industrial pollutants – to dilute pollutants in storm water to meet benchmarks and water quality objectives.

6-4 **Need for Improved Land Use Planning and Control**: In the EIR, the project proponents do not appear to fully recognize extenuating problems in the Sun Valley area, such as the presence of old landfills. The City of Los Angeles should ensure that current land use practices do not exacerbate environmental problems from past land disposal practices. For example, many businesses are located on old unlined landfills where subsidence is a problem. In addition to building and safety problems resulting from the subsidence, drainage on these sites is not properly designed and engineered to direct runoff away from underlying landfill strata, and underlying ground water may be impacted. Correction of these land use and drainage problems needs to be a priority in storm drain management of the area.

6-5 Also, to fully protect underlying ground water resources and to ensure success of this project, the City and County should evaluate critical recharge areas vis a vis compatibility with existing land use practices. We recommend that this evaluation of critical recharge areas include active and inactive gravel mines. We further recommend that the City and County ensure that they condition gravel mining projects with restrictions to prevent mining below the water table and the resulting exposure of ground water. Finally, it appears that the reclamation plans for the gravel pits in the area are out of date or missing, and we recommend that the City review these plans and require gravel miners to update and fund their plans in a manner consistent with the City's General Plan.

6-6 **Need for More Rigorous Source Control and Code Enforcement**: We are concerned that the project proponents assume adequate source control and code enforcement, despite the fact that many businesses operating in Sun Valley do not comply with all State and local environmental regulations. A much heavier regulatory presence is needed. For example, there is a high incidence of illicit discharges from Sun Valley businesses, which is not consistent with the City's General Plan and which is in violation of the City's storm water ordinance and, in many cases, the State's General Permit. The Board has been making a concerted effort to inspect heavy industrial facilities in Sun Valley to ensure compliance with prohibitions on non-storm water discharges and to review the adequacy of "best management practices" (BMPs) that industrial operators implement to prevent and minimize contamination of storm water. Working in concert with other State, County, and City agencies is helping to achieve more comprehensive compliance with all environmental regulations. However, resources at all agencies are strained, and significant levels of non-compliance remain (e.g. curbside dismantling, non-filers, illicit discharges, inadequate source controls and structural controls). Sun Valley needs an active and continuous field presence by all agencies, and the project proponents should address the consequences of inadequate enforcement.

6-7 **Need for Coordinated Monitoring**: To adequately measure the effectiveness of a water treatment system and ensure pollutants are not transferred to ground water, the project

6-7 cont'd needs to include a coordinated and on-going monitoring program. The EIR should identify who will be responsible for implementing and funding such a coordinated monitoring program.

6-8 In our comment letter on the Notice of Preparation, we asked that the project proponents evaluate the risk of contamination to ground water from landfills – in particular, the risk that additional fluctuations in the water table may saturate and leach wastes in unlined landfills. In the EIR, the project proponents did explain that one monitoring well at a portion of the Bradley Landfill will provide warning of a rising water table. However, there are other portions of Bradley and there are many other landfills where fluctuations in the water table need to be measured and evaluated. The project proponents need to correct this deficiency.

6-9 Thank you for the opportunity to review the EIR and provide these comments. We would like to acknowledge the significant efforts of the local agencies, community groups, and other stakeholders who have formed a partnership to come up with this innovative solution. Although we do have to caution that this project still has challenging water quality issues to address, as discussed above, we are especially pleased to acknowledge the potential for this project to augment water supplies, consistent with our Board's approval of the County's SUSMP (Standard Urban Storm Water Mitigation Plans).

Please do not hesitate contact Mr. Ivar Ridgeway at (213) 620-2150 or me at (213) 576-6618 should you have questions or wish to discuss our comments.

Sincerely,

Wendy Phillips

Wendy Phillips
Chief, Storm Water Section

cc: State Clearinghouse
Shahram Kharaghani, Storm Water Division, City of Los Angeles

Responses to Letter No. 6 Wendy Phillips, Chief, Storm Water Section Los Angeles Regional Water Quality Control Board

6-1 The Regional Board's support for the project is appreciated.

6-2 Water quality impacts of the project were determined to be less than significant after incorporation of mitigation measures. However, based on comments from the Regional Board as well as DHS, ULARA Watermaster, LADWP, and City of Los Angeles Environmental Affairs Department, an additional mitigation measure (W-4, EIR Section 4.7.7; establishment of an "alert level" for groundwater elevation below project sites located near landfills) and clarification regarding the Sheldon Pit project component design have been incorporated into the Final EIR. The alert level in Mitigation Measure W-4 was defined to be 10 feet based on the existing alert level for Bradley Landfill. With incorporation of all mitigation measures identified in the EIR, including W-4, LACDPW believes that project impacts on groundwater quality would be less than significant. Please also see responses to comments below.

6-3 As noted in revised Section 4.7.4.1, the general aim of the Watershed Management Plan will be to provide sufficient stormwater treatment to ensure that the quality of water infiltrated under the project is equal or higher than existing groundwater. There will be no reliance on dilution of stormwater with gravel washwater to meet water quality objectives.

The project components, including proposed stormwater treatment, are described at a programmatic level. When each component is proposed for implementation, more detailed design will be completed, including the selection of water quality treatment units. Please note that treatment methods other than sedimentation (e.g., filtration for metals removal) may also be implemented if necessary.

Regarding source control, please see response to comment 6-6. Regarding groundwater exposure at Sheldon Pit, see response to comment 4-2.

6-4 Regarding potential groundwater quality impacts and historical landfills, a new mitigation measure (W-4) has been developed to prevent interaction of stormwater infiltrated under the Watershed Management Plan with landfill materials. Please see response to comment 4-4.

Regarding changes in site-specific drainage at individual parcels that may be located atop historical landfills, please note that the storm drains included in the Watershed Management Plan will be located in order to collect flow from existing streets. Parcel-specific drainage improvements will be incorporated as part of the Onsite Best Management Practices component of the Watershed Management Plan at participating properties. Other parcel-specific drainage improvements are not proposed.

6-5 During the planning process for the Watershed Management Plan, compatibility with existing land uses in the drainage area was considered when the concept designs for the project components were developed. For example, no infiltration is proposed at the

Strathern Pit project component since the land uses in the drainage area for this site are primarily industrial. As described in Mitigation Measure H-1 (EIR Section 4.5.4), site-specific evaluations of onsite and adjacent land uses (Phase I Environmental Site Assessments) will be conducted for each project component to identify historical land uses that could be incompatible with stormwater infiltration.

Sheldon Pit is the only remaining mining site located within the watershed. Please note that the County does not have permitting authority over mining activities within City of Los Angeles boundaries, and therefore does not have the authority to condition gravel mining projects with restrictions to prevent mining below the water table or to request updates to reclamation plans. The City of Los Angeles Department of City Planning, as the lead agency for the project area under the Surface Mining and Reclamation Act and in accordance with Section 13.03E and F of the Los Angeles Municipal Code, reviews applications for mining permits and reclamation plans (or amendments thereto). The City Planning Commission has the authority to approve new or amended reclamation plans.

6-6 LACDPW staff recognize the industrial nature of the project area, and that many businesses have not complied with State and local environmental regulations. The project includes stormwater treatment and monitoring, and does not rely on future source control for improving stormwater quality in the project area.

While the County and City of Los Angeles are co-permittees for the NPDES municipal stormwater permit, enforcement and source control in the project area are under the jurisdiction of City of Los Angeles (LARWQCB, 2001). It is LACDPW's understanding that enforcement activities by the City and Regional Board have recently been increased in the Sun Valley area.

6-7 Responsibility for monitoring will vary depending on the location and agreement reached for each project component. As design of each project component is more specifically defined, and as project-level CEQA review is undertaken for each project component, the agency responsible for coordinating and funding the monitoring program will be identified (e.g., in a memorandum of understanding or other agreement). As this information is available, it will be shared with the Stakeholders.

6-8 Based on comments received on the draft EIR, a new mitigation measure (W-4) has been developed to prevent interaction of stormwater infiltrated under the Watershed Management Plan with landfill materials. Please see response to comment 4-4.

6-9 The Regional Board's support for the project is appreciated.

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Comment Letter No.7A

Review of
DRAFT Program Environmental Impact Report
Sun Valley Watershed Plan
by MWH
dated October 2003
Reviewed by Mark Mackowski, ULARA Watermaster

The following comments are based on my review of the above-referenced document.

Table 1-1
Strathern Pit
"The collected stormwater would be either reused for gravel processing (Alternative 3) or transferred to the Tujunga Spreading Grounds for infiltration (Alternatives 1, 2, and 4)."

As long as Vulcan continues its practice of disposing of gravel wash water into the Sheldon Pit, where potable groundwater is exposed, the use of stormwater runoff for gravel processing is not advisable. Furthermore, this activity could result in a violation of the Surface Water Treatment Rule or other regulatory requirements. Contact the
7A-1 Regional Water Quality Control Board and Calif. Dept. of Health Services for more info.

Table 1-2
Strathern Pit

See above comments above for Table 1-1.

Page 2-4, para. 1
"Existing water uses that do not require potable water such as gravel washing and landscape irrigation are considered for substitution with captured stormwater."

See above comments above for Table 1-1

Page 3-5
3.4.1 Cal Mat Pit
"Since then it has been used as a landfill for inert construction debris…"
"According to conversations with the management staff of Vulcan Materials Company, a small portion of the 30-acre area (the southern corner of Wicks Street and Dronfield Avenue) was not used for gravel excavation, landfilling, or wash water deposition, and
7A-2 may contain natural soils."
"The primary objective of this project component is to capture and infiltrate at Cal Mat Pit stormwater collected from surrounding residential areas…"

It appears that the subsurface beneath the proposed infiltration area within the pit may not have been completely characterized. Infiltration should not be performed through landfill debris that may contain lead-based paint, asbestos, or other construction materials that could have a detrimental impact on the underlying groundwater. The subsurface should be thoroughly characterized before being used as an infiltration basin. In addition, any infiltration occurring adjacent to a landfill must be far enough away such that infiltrated water does not travel laterally into the landfill material.

7A-2 cont'd

Page 3-7
Cal Mat Pit, Interim Phase
"During the Interim Phase…the project site would be operated as a landfill for inert construction debris…[and] would continue to serve as a flood control facility, collecting and infiltrating stormwater through standpipes (vertical pipes) that would be inserted into the landfill material."

See above comments. Infiltration should not be performed through "inert" material that may contain lead-based paint, asbestos, or other contaminants found in construction debris.

7A-3

Page 3-19 through 3-22
Sheldon Pit
General Comments – It is unlikely that runoff from the surrounding area or from Tujunga Wash would be allowed to be infiltrated within the pit, unless the pit is modified to create a vadose zone in the infiltration area. Runoff that does not meet Drinking Water Standards cannot come into direct contact with potable groundwater.

7A-4

Page 3-29
Strathern Pit
See above comments for Table 1-1, Strathern Pit.

Page 3-42
Vulcan Gravel Processing Plant
"The collected stormwater may be reused for gravel washing operations at the plant, providing water conservation benefits."

See above comments for Table 1-1 Strathern Pit and Sheldon Pit.

7A-5

Page 3-49, Table 3-8
Add ULARA Watermaster to Construction-Onsite BMPs; Operation and Maintenance-Onsite BMPs; and Monitoring Plan.

There may be water rights and water quality issues that should be reviewed by the Watermaster Office during the course of the Project.

7A-6

Page 4.5-3
Hazardous Materials
In addition to the Cortese List, the Regional Water Quality Control Board and the California Department of Toxic Substances Control (DTSC) may have additional data on contaminated sites. Furthermore, sites contributing runoff to be reused or infiltrated should also be investigated for the presence of hazardous materials.

7A-7

Page 4.7-18, para. 1
"During the period between 1996 and 2001, the maximum was 62,000 acre-feet (1998-1999 storm season) and the minimum was 14,000 acre-feet (1999-2000) (ULARA Watermaster, 2002)."

The new minimum was during the 2001-2002 storm season, when 2,664 acre-feet were spread. This data was provided in the May 2003 Watermaster Report.

Page 4.7-19
Delete "Groundwater in the SFB is generally within the recommended limits of the California Title 22 drinking water standards (ULARA Watermaster, 2002)."

"Existing groundwater contamination in the SFB includes 1) Volatile Organic Carbons (VOCs)…" Replace the word "Carbons" with "Compounds".

7A-8

"…2) sulfate and TDS in the wells in the western end…". Sulfate and TDS are naturally occurring and are not considered "contamination" in the same sense that it is used in the rest of the paragraph. Please clarify.

7A-9

Page 4.7-24, section 4.7.4
Under the proposed project, the uses of collected stormwater are: 1) infiltration for groundwater recharge, 2) reuse for gravel washing at the Vulcan Gravel Processing Plant,…".

See above comments regarding the discharge of stormwater into exposed groundwater, i.e. at the Sheldon Pit.

Page 4.7-31
"Gravel wash wastewater from the Vulcan Gravel Processing Plant is currently discharged with minimal pretreatment into the portion of Sheldon Pit that has exposed groundwater; this practice is expected to continue after implementation of the project."

See above comments regarding the contact of runoff with potable groundwater.

Page 4.7-31, para. 2
See above comments regarding the contact of runoff with potable groundwater.

Page 4.7-38, para. 4
"However, direct infiltration of stormwater is not proposed in the portion of Sheldon Pit with the exposed groundwater."

Stormwater collected at Strathern Pit…for reuse (i.e., at Vulcan Gravel Processing Plant)…"

7A-9 cont'd

See above comments. Reuse of stormwater at the Vulcan Plant will result in the discharge of this runoff into exposed groundwater within Sheldon Pit.

7A-10

Page 4.7-38, para. 4
"At CalMat Pit, a 10-foot layer of gravel and sand will be placed at the bottom of the pit prior to establishing the proposed infiltration basin."

During spreading, the mounding effect of the underlying groundwater effectively reduces the thickness of the vadose zone. The constructed vadose zone layer should be designed to be at least 10 feet thick during long-term spreading. At no time should the water table rise closer than 10 feet from the spreading basin invert.

7A-11

Table 4.7-15
Sheldon Pit, Strathern Pit, Cal Mat Pit, Vulcan Gravel Processing Plant
See above comments on contact between runoff and potable groundwater.

Page 4.7-49, section 4.7.6.3.4
See above comments on contact between runoff and potable groundwater, and potential violation of Surface Water Treatment Rule and other regulations.

Page 4.7-51, para. 1
"Alternative 2 includes infiltration of additional 6,000 acre-feet of water diverted from Tujunga Wash into Sheldon Pit."

This is a possible violation of the Surface Water Treatment Rule or other regulations governing the contact of runoff with potable groundwater.

Comment Letter No. 7B

Review of
DRAFT Sun Valley Watershed Management Plan
By Mark Mackowski

The following comments are based on my review of the DRAFT Sun Valley Watershed Management Plan dated October 2003 by Montgomery Watson Harza for the Los Angeles County Department of Public Works.

I note also that Mario Acevedo, LADWP, has made additional comments, and where we agree, I have not duplicated Mario's remarks.

Page 2-18, para. 3
2nd bullet point "Infiltration of return flows from human uses (e.g. excess irrigation water, septic tanks)"

Replace with **"Infiltration of delivered water (return flows from excess irrigation water, septic tanks, etc.)"**

Page 2-18, para. 5
"The use of spreading grounds in the San Fernando Valley has been significantly limited…"

Replace with "**The use of Tujunga Spreading Grounds in the San Fernando Valley has been significantly limited…"**

Page 2-18, para. 5
Delete "…specifically near the Hansen Spreading grounds."

Page 2-19, para. 2
Delete "Groundwater in the SFGB is generally within the recommended limits of drinking water standards although there are some water quality impairments."

This is because there are very large areas within the SFGB that exceed drinking water standards for VOCs and nitrate, hence the Superfund designation.

Page 2-19, para. 6
"In response to the public health threat, the cities were forced either to shut down…"

Delete "either" from this sentence.

Page 2-19, para. 6
The contaminated areas of the SFGB have been subdivided into four discrete Superfund sites (San Fernando Areas 1, 2, 3, and 4)…"

Replace with "**The contaminated areas of the SFGB have been divided into three discrete Superfund sites (San Fernando Areas 1, 2, and 4)…"**

This is because Area 3 is within the Verdugo Basin, not the SFGB.

Page 2-20, para. 1
Replace entire paragraph with **"USEPA coordinates the cleanup effort in cooperation with state, regional, and local agencies. Within Area 1, USEPA has established two operable units (OUs) – the North Hollywood OU and the Burbank OU – to facilitate the cleanup of the groundwater contamination. The North Hollywood OU has been operating since 1989, and uses aeration and vapor-phase granular activated carbon (GAC) to remove the VOCs. The Burbank OU has been operating since 1996, and uses aeration, liquid-phase GAC, and vapor-phase GAC to remove the VOCs. The treated water from both OUs is disinfected and delivered to the public water systems of the City of Los Angeles and the City of Burbank, respectively (USEPA 2000)."**

Page 2-20, para. 2
Delete "Monitoring wells, but no drinking water wells, have exceeded the state or federal Maximum Contaminant Levels (MCL) (LARWQCB, 2000)."

This data may be old. Several drinking water wells have exceeded the MCL of 50 ppb.

Page 3-14, para. 1
"Projects benefits include significant flood protection, water reuse, infiltration, habitat creation, and recreational uses…".

The Cal Mat Pit is proposed to accept "inert debris" to offset the cost of the project. However, "inert debris" can contain material such as lead-based paint and asbestos. This inert debris must be completely characterized before infiltration, and must not contain any material that is capable of degrading groundwater quality. The Watermaster Office would discourage infiltration through any material that could potentially contaminate the underlying groundwater.

Page 3-20, para. 4 and 5
"Vulcan uses the water for irrigation, dust control, and gravel washing."
"Given this information, the improved non-potable water distribution system, selected for use in Alternative 3, delivers water from the retention basin at Strathern Pit to the Vulcan gravel processing plant only."

The use of runoff for gravel washing would not be allowed as long as Vulcan continues its current practice of disposing of gravel wash water into the exposed groundwater within Sheldon Pit. Stormwater runoff is not allowed to contact exposed groundwater used for potable purposes unless it meets drinking water requirements.

Responses to Letter No. 7 **Mark Mackowski**
Upper Los Angeles River Area Watermaster

7A-1 As described in response to comment 4-2, under the Watershed Management Plan, disposal of gravel washwater to an area with exposed groundwater is not proposed at Sheldon Pit.

The Surface Water Treatment Rule was established by EPA in 1989 to protect public drinking water sources from certain pathogens such as Cryptosporidium. The rule establishes maximum contaminant levels for these pathogens, and also requires public water supply systems using surface water sources or groundwater sources under the direct influence of surface water to include filtration and disinfection in their treatment process. The proposed project is not anticipated to affect the existing wells in the project area with respect to their status under the Surface Water Treatment Rule (I. Ridgeway, pers. comm., 2004).

7A-2 As described in Section 3.4.1.1, the Cal Mat Pit project component site is located within a 90-acre site, a portion of which is currently operated as an inert landfill. The Cal Mat Pit project component proposes to use the approximately 30-acre area on the northeastern corner of the site, which is separated by a berm from the active landfill operations in the southern portion of the pit. EIR Section 3.4.1 has been revised to clarify that the Cal Mat Pit project component will be designed so that stormwater will not come in contact with landfill material during infiltration (standpipes will not be perforated within the layer of landfill materials; landfill materials will be separated from soils by impervious layers (clay or geotextile membrane)). Section 3.4.1 has also been revised to acknowledge that inert landfill material may contain construction materials that may have a detrimental effect on groundwater quality (e.g., lead-based paint and asbestos). Please also see response to comment 4-4 regarding the addition of a new mitigation measure to ensure that project infiltration does not result in interaction of groundwater with landfill materials.

7A-3 EIR Section 3.4.7 has been revised to clarify that Sheldon Pit will be modified to create a vadose zone in the infiltration area. Please also see response to comment 7A-1.

7A-4 Please see response to comment 7A-1.

7A-5 Table 3-8 (EIR Section 3.7) has been revised to include ULARA Watermaster under Construction – Onsite BMPs, Operation and Maintenance – Onsite BMPs, and Monitoring Plan.

7A-6 As described in Mitigation Measure H-1 (EIR Section 4.5.4), a Phase I Environmental Site Assessment (ESA) (including review of environmental regulatory databases such as those maintained by Regional Board and DTSC) will be conducted to determine the site-specific potential for soil contamination at all project component sites (except Onsite BMPs, Tree Planting & Mulching, and Storm Drains). Mitigation Measure H-1 has been revised to indicate that the Phase I ESA will be conducted in accordance with the American Society of Testing and Materials (ASTM) standard for Phase I ESAs. In addition, Mitigation Measure H-1 has been revised to indicate specifically that databases maintained by the Regional Board and DTSC will be included in the review of environmental regulatory databases during the Phase I ESA.

7A-7 EIR Sections 4.7.3.2 and 4.7.3.4 have been revised to incorporate the changes noted by the Watermaster.

7A-8 EIR Section 4.7.3.4 has been revised to separate statements concerning VOC contamination from observed elevated levels of sulfate and TDS.

7A-9 Please see response to comment 7A-1.

7A-10 Please see response to comment 4-4 and 6-3.

7A-11 Please see response to comment 7A-1.

7B The Watermaster's comments on the Draft Watershed Management Plan have been reviewed and incorporated into the Final Watershed Management Plan. Section 3 of the EIR has been correspondingly revised to incorporate these comments.

Comment Letter No. 8

South Coast
Air Quality Management District
21865 E. Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 · www.aqmd.gov

FAXED: DECEMBER 5, 2003

December 5, 2003

Mr. Vik Bapna
County of Los Angeles
Department of Public Works
Watershed Management Division
P. O. Box 1460
Alhambra, CA 91802-1460

Draft Program Environmental Impact Report (DPEIR) for the Sun Valley Watershed Management Plan

Dear Mr. Bapna:

The South Coast Air Quality Management District (AQMD) appreciates the opportunity to comment on the above-mentioned document. The following comments are meant as guidance for the Lead Agency and should be incorporated in the Final Program Environmental Impact Report.

Pursuant to Public Resources Code Section 21092.5, please provide the AQMD with written responses to all comments contained herein prior to the certification of the Final Program Environmental Impact Report. The AQMD would be happy to work with the Lead Agency to address these issues and any other questions that may arise. Please contact Charles Blankson, Ph.D., Air Quality Specialist – CEQA Section, at (909) 396-3304 if you have any questions regarding these comments.

Sincerely

Steve Smith

Steve Smith, Ph.D.
Program Supervisor, CEQA Section
Planning, Rule Development & Area Sources

Attachment

SS:CB

LAC031023-01
Control Number

Draft Program Environmental Impact Report (DPEIR) for the Sun Valley Watershed Management Plan

1. **<u>Overlapping Construction Emissions</u>**: The lead agency estimates construction
emissions for each of the 15 components of the proposed project separately. The
estimated emissions are presented in Table 4.1-5 on page 4.1-10 of the DPEIR and shown
again in Appendix C. The lead agency concludes that "the implementation of the project
would result in less-than-significant PM10, SO_X, ROC and CO emissions on a
component-by-component basis." On page 1-8 of the DPEIR, it is stated that although
the proposed project will be phased over ten years, five of the plan components would be
implemented in one to three years. Since no construction schedules for each of the
proposed components are provided, this means that the construction of two or more of the
8-1 individual components could overlap. According to the discussion in Chapter 3, at a
minimum, the five phase I projects have the potential to be constructed concurrently.
Because Table 4.1-5 lists each project as a discrete nonoverlapping project, no
consideration is given to overlapping construction emissions that may exceed the daily
regional significance thresholds for CO, ROC (VOC), SO_X, and PM10 in addition to
already exceeding the daily regional NO_X significance threshold. The SCAQMD
therefore, recommends that the lead agency identify a construction schedule for all
individual projects that comprise the watershed management plan. Once the construction
schedules are established, the emissions from any overlapping construction projects
should be summed and a determination of significance should then be based on the
revised (summed) emission estimates. If new significant adverse impacts are identified,
additional mitigation measures should be required.

2. **<u>Peak Construction Emissions</u>**: According to the construction emission results in
Table 4.1-5 on page 4.1-10 of the DPEIR, daily emissions are labeled as being averages,
which are assumed to be derived by dividing the quarterly emission estimates by 65,
although the daily average results do not appear to be precise results. In any event, the
1993 SCAQMD CEQA Air Quality Handbook recommends that the lead agency
determine daily "peak" construction emissions for the criteria pollutants. The daily peak
construction emissions represent the worst-case scenario where the maximum number of
8-2 different construction equipment would be in use on any one day for different kinds of
construction activities, as well as including the maximum number of worker commute
vehicle emissions, and all other emission sources such as on-road heavy-duty haul trucks.
This analysis would ensure that all construction emissions sources are accounted for and
the appropriate mitigation measures identified to reduce those emissions. It is therefore
suggested that the lead agency identify peak daily construction emissions, any
overlapping construction emissions (see comment # 1), and present the corresponding
emissions in a separate table in the Final PEIR.

3. **<u>Table C-18</u>**: Review of the material delivery and work truck assumptions in the table,
indicates that haul truck trip lengths (one way) are listed as one mile, which appears to
8-3 substantially underestimate haul truck trip lengths. Please document the source of the
one-mile haul truck length or revise the analysis to include a more reasonable haul truck
trip length.

8-4 4. **Mitigation Measures**: Related to comment #2 above, part of the reason the SCAQMD recommends that lead agencies show peak daily construction emissions from all onsite and offsite emissions sources is to allow the lead agency to quantify the effects of the mitigation measures based on the control efficiencies of each of the mitigation measures as applied to each emissions source. Although the lead agency concludes that NO_X emissions will continue to be significant after implementing mitigation, without quantifying peak daily construction emissions, including any overlapping constructions, and without quantifying the effectiveness of the mitigation measures, the lead agency has not demonstrated that CO, VOC, SO_X and PM10 emissions are not significant.

8-5 5. **Mitigation Measure A-14**: The SCAQMD commends the lead agency for recognizing the emission reduction potential of the technologies identified in mitigation measure A-14. However, the SCAQMD recommends that the lead agency make a stronger commitment to implementing measure A-14 than simply saying that, "...implementation of the following measure [A-14] will be considered at the time of construction of individual project components."

8-6 6. **Future Operational Emissions:** In general, once construction of the individual projects is completed, existing uses resume or no further uses are anticipated at many of the sites. However, some projects appear to result in the construction of new parks that will be used by the public, thus, attracting new vehicle trips to that location. No analysis of the operational emissions of the new parks appears to have been performed. The SCAQMD, therefore, recommends that an analysis of operational impacts for the new park projects or any other project components that may introduce new emissions sources be performed.

Responses to Letter No. 8 Steve Smith, Ph.D., Program Supervisor
South Coast Air Quality Management District,
CEQA Section

8-1 Based on typical County project development and construction schedules reviewed by LACDPW staff, it has determined that the construction periods of the proposed project components are not likely to overlap due to the relatively short duration involved at each site, varying project financing mechanisms and their effect on the planning and implementation schedules, and different time horizons for obtaining various permits and approvals. Section 4.1.3 has been revised to clarify this information. Each of the project components will undergo project-level CEQA review at the appropriate time, and will consider other Plan components and their cumulative construction air quality impacts, and any feasible mitigation measures, at that time.

8-2 The air emissions presented in Table 4.1-5A (Section 4.1.3; labeled Table 4.1-5 in the Draft EIR) were estimated based on worst case assumptions (i.e., compressed construction schedule with many pieces of equipment in operation each work day and maximum acreage of potential site disturbance). Therefore, actual quarterly emissions are expected to be less than the estimate shown above, and the average daily emissions (i.e., quarterly emissions divided by the number of work days) were considered to be analogous to peak day emissions. However, in response to the District's comment, EIR Section 4.1.3 has been revised to include Table 4.1-5B, which presents the estimated peak day emissions for each project component based on the predicted maximum use of highest emissions construction equipment, plus materials delivery, other work trucks, and worker commutes. Appendix C has been revised correspondingly to include the assumptions and results of calculations used in estimating the peak day emissions. In addition, Table 4.1-5A has been revised as follows: 1) the total quarterly emissions (tons per quarter) were recalculated to correct a unit conversion error; and 2) the average daily emissions were recalculated for project components with construction periods shorter than one quarter (i.e., New Park on Wentworth, Roscoe Elementary School, Stonehurst Elementary School, and Stonehurst Park) by dividing the total quarterly emissions by the actual predicted number of construction days (instead of 65 days).

8-3 The haul truck trip length of 1 mile (one way) was used in estimating air emissions from materials delivery trucks since the project area (Sun Valley) includes many facilities that provide construction materials and dispose of construction debris. In some instances (e.g., Cal Mat Pit, Sheldon Pit, Stonehurst Park, and Valley Steam Plant), the project sites are directly adjacent to or are located at these facilities. Due to this unique characteristic of the project area, 1 mile is considered a reasonable assumption for the haul trip length.

8-4 Please see responses to comments 8-1 and 8-2, and new Table 4.1-5B.

8-5 Since the proposed Watershed Management Plan has been reviewed at the programmatic level, the specific description of project components and the future lead agency of each component is not known. Therefore, Mitigation Measure A-14 has been defined for the consideration of LACDPW or other project proponent at the time of actual component implementation. Since the feasibility of implementation of this measure is not known, its efficiency in reducing NO_x emissions is not quantified.

8-6 Section 4.1.3.2 has been revised to include estimated operational air emissions from vehicle travel to new parks proposed as part of the Watershed Management Plan (Table 4.1-6B). As compared to SCAQMD thresholds, these emissions are predicted to be less than significant.

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METROLINK®

SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY

Comment Letter No. 9

Member Agencies:
Los Angeles County Metropolitan Transportation Authority.
Orange County Transportation Authority.
Riverside County Transportation Commission.
San Bernardino Associated Governments.
Ventura County Transportation Commission.
Ex Officio Members:
Southern California Association of Governments.
San Diego Association of Governments.
State of California.

December 1, 2003

Mr. Vik Bapna
County of Los Angeles Dept. of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

RE: Comments on the Draft Program EIR for the Sun Valley Watershed Management Plan SCH No. 2002111051

Dear Mr. Bapna:

The Southern California Regional Rail Authority (SCRRA) received a full copy of the DPEIR and the Draft Sun Valley Watershed Management Plant. Thank you for providing these copies and the opportunity to comment on the draft documents. As background information, SCRRA is a five-county Joint Powers Authority (JPA) that operates the regional commuter rail system known as Metrolink. Additionally, SCRRA provides rail engineering, construction, operations and maintenance services to its five JPA member agencies. The JPA consists of the Los Angeles County Metropolitan Transportation Authority (MTA), San Bernardino Associated Governments (SANBAG), Orange County Transportation Authority (OCTA), Riverside County Transportation Commission (RCTC) and Ventura County Transportation Commission (VCTC).

SCRRA operates commuter rail service through the project area as Metrolink's Ventura County Line and Antelope Valley Line. The two lines merge northwest of the Downtown Burbank Metrolink Station. It was very helpful to have the railroad right of ways noted in the document's graphics. Based on our agency's review of the Draft PEIR and the Watershed Management Plan, SCRRA would like to convey the following specific recommendations:

9-1

1. The Draft PEIR identifies two sump areas: 1) San Fernando Road at Tuxford and 2) Vineland between Sherman Way and Van Owen. On the Antelope Valley Line, San Fernando Road at Tuxford is grade separated from the railroad – the street is in an underpass. This location is continually flooded in the heavy rains, as shown in your photos. When flooding occurs, the street traffic is diverted to the at-grade rail crossings at Sheldon St., Penrose St. or Sunland Blvd. SCRRA supports the elimination of flooding at Tuxford since this would improve traffic circulation during storms. SCRRA requests that while the sump is being fixed, the Tuxford under crossing be closed for the shortest amount of time possible, since traffic will have to be rerouted to the neighboring

700 S. Flower Street 26th Floor Los Angeles CA 90017 Tel [213] 452.0200 Fax [213] 452.0425
www.metrolinktrains.com

9-1 cont'd at-grade rail crossings. The Vineland road crossing on Metrolink's Ventura County Line is not grade separated and is within the sump area identified as an area prone to flooding; therefore, SCRRA also supports the elimination of flooding at Vineland.

9-2
2. Table 2-2 on Page 2-8 shows SCRRA as a possible permitting agency. If new storm drains or drainage structures cross under the railroad, then license agreements will be required of our member agency (MTA) and a Right-of-Entry Agreement (Form 6) will be required for the construction of the structure. These requirements can be viewed on our website at www.metrolinktrains.com, subsection "About Metrolink" and then in "Public Projects/Engineering".

9-3
3. The Union Pacific Railroad (UPRR) must concur with projects affecting their property along the right of way where SCRRA operates the Ventura County Line. The UPRR and the MTA both own portions of that right of way.

9-4
4. There are many references to new storm drains. Please describe and map the specific locations of the new storm drains, if possible at the programmatic level of environmental review. SCRRA will then determine if any of the new storm drains will cross or will otherwise encroach into railroad properties.

9-5
5. Due to close proximity to railroad property, the following locations identified in the Draft EIR are of particular concern to SCRRA:
    a. Parking Lot on Sherman Way (Page 3-14)
    b. Roscoe Elementary School (Figure 3-11 on Page 3-19)
    c. Storm Drains on San Fernando Road (Page 3-27)
    d. Tuxford Green (Page 3-36)
    e. Valley Steam Plant (Page 3-39)
    f. Vulcan Gravel (Page 3-43)

9-6
6. There is no mention of SCRRA signal cables or conduits. It is important to note that SCRRA is not part of dig alert and must separately mark cables in the field if required for underground installations across rail rights-of-ways.

9-7
7. There is a Pacific Pipeline (PPSI) oil line in an easement running along Metrolink's Antelope Valley Line. This important infrastructure must be considered when improvements are designed.

9-8
8. Walls, or other protective barriers, must separate any new detention basins that double as parks, if they border SCRRA rail right of ways.

9-9
9. SCRRA will be replacing an existing bridge near Roscoe Elementary with storm drainpipes, which may be affected by the work described in the Draft EIR.

9-10 10. There are three 36-inch corrugated metal pipes just west of Clybourn Ave., which cross under the rail right of way. The area is prone to flooding due to the downstream inability to handle flows during heavy rains. Corrective actions should be considered as part of this project.

Once again, thank you for requesting SCRRA's input on this Draft EIR. If you have any questions regarding these comments please contact Deadra Knox, Strategic Development Planner, at (213) 452-0359 or by e-mail at knoxd@scrra.net.

Sincerely,

David Solow
Chief Executive Officer

cc: Patricia Chen
MTA
One Gateway Plaza
MS 99-23-4
Los Angeles, CA 90012-2952

Freddy Cheung
Union Pacific RR
19100 Slover Ave.
Bloomington, CA 92316

Steve Fox
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SCRRA Files

Responses to Letter No. 9 David Solow, Chief Executive Officer
Southern California Regional Rail Authority

9-1 LACDPW will work with the contractor to minimize the time that the Tuxford under-crossing would be closed. As described in Mitigation Measure T-1 (EIR Section 4.11.6), a traffic control and/or detour plan will be developed for project sites where construction activities would encroach into the right-of-way of a public roadway. LACDPW acknowledges SCRRA's support for elimination of flooding at Vineland.

9-2 Table 2-2 (EIR Section 2.4.2) has been revised to incorporate information regarding license and Right-of-Entry agreements required for structures that cross under the railroad.

9-3 As applicable, LACDPW will coordinate with UPRR for projects affecting their property along the Metrolink Ventura County Line at the time that LACDPW conducts project-level CEQA review for such projects. Please see revised Table 2-2, EIR Section 2.4.2.

9-4 Figure 3-17 (EIR Section 3.4.10) shows the locations of the proposed storm drains at the programmatic level. Prior to implementation of specific storm drain segments, detailed drawings will be provided to SCRRA to determine if SCRRA right-of-ways would be impacted.

9-5 LACDPW has noted the project sites that are of particular concern to SCRRA due to their proximity to railroad property. Coordination with SCRRA will be conducted for these project sites during site-specific project design.

9-6 EIR Section 4.12.1 and 4.12.3.1 have been revised to note the presence of and potential impacts on SCRRA signal cables or conduits during project construction.

9-7 Section 4.12.1 has been revised to note that the Pacific Pipeline's oil line is located in an easement running along Metrolink's Antelope Valley Line.

9-8 If any new parks are constructed directly adjacent to SCRRA rail rights-of-way, protective barriers to separate the park from the rail right-of-way would be incorporated into the project design. EIR Section 4.5.3.4 has been revised to incorporate this information.

9-9 LACDPW encourages SCRRA to coordinate with the City and the County of Los Angeles. The County is willing to review drainage plans submitted by SCRRA for the referenced bridge so we can ensure proper coordination with the Watershed Management Plan.

9-10 Storm Drains proposed in Sherman Way as part of the Watershed Management Plan is expected to reduce the volume of stormwater reaching the referenced intersection.

Comment Letter No. 10

SOUTHERN CALIFORNIA

ASSOCIATION of GOVERNMENTS

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December 1, 2003

Mr. Vik Bapna
Los Angeles County Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

RE: **Comments on the Draft Program Environmental Impact Report for the Sun Valley Watershed Management Plan – SCAG No. I 20030602**

Dear Ms. Bapna:

Thank you for submitting the **Draft Program Environmental Impact Report for the Sun Valley Watershed Management Plan** to SCAG for review and comment. As areawide clearinghouse for regionally significant projects, SCAG reviews the consistency of local plans, projects, and programs with regional plans. This activity is based on SCAG's responsibilities as a regional planning organization pursuant to state and federal laws and regulations. Guidance provided by these reviews is intended to assist local agencies and project sponsors to take actions that contribute to the attainment of regional goals and policies.

It is recognized that the proposed Project is a watershed management plan, which provides a blueprint for a multi-purpose flood control program to solve the local flooding problem in the Sun Valley Watershed area, while increasing water conservation, recreational opportunities, and wildlife habitat, and reducing stormwater pollution.

SCAG staff has evaluated the **Draft Program Environmental Impact Report for the Sun Valley Watershed Management Plan** for consistency with the Regional Comprehensive Plan and Guide and Regional Transportation Plan. The Draft PEIR includes a discussion on the proposed Projects' consistency with SCAG policies and applicable regional plans, which were outlined in our December 5, 2002 letter on the Notice of Preparation (NOP) for this Draft PEIR.

10-1 The Draft PEIR, in Section 6.5.3, SCAG Regional Comprehensive Plan and Guide, cited SCAG policies and addressed the manner in which the proposed Project is consistent with applicable core policies and supportive of applicable ancillary policies. The Draft PEIR incorporated a side-by-side comparison of SCAG policies with a discussion of the consistency or support of the applicable policies with the proposed Project. This approach to discussing consistencv or support of SCAG policies is commendable and we appreciate your efforts. Based on the information provided in the Draft PEIR, we have no further comments. A description of the proposed Project was published in the October 16-31, 2003 Intergovernmental Review Clearinghouse Report for public review and comment.

If you have any questions, please contact me at (213) 236-1867. Thank you.

Sincerely,

JEFFREY M. SMITH, AICP
Senior Regional Planner
Intergovernmental Review

Responses to Letter No. 10 **Jeffrey M. Smith, AICP, Senior Regional Planner Southern California Association of Governments, Intergovernmental Review**

10-1 LACDPW acknowledges SCAG's review of project consistency with SCAG policies.

Comment Letter No. 11A

December 8, 2003

Mr. Vik Bapna
Watershed Management Division
County of Los Angeles Department of Public Works
P. O. Box 1460
900 South Fremont Avenue
Alhambra, CA 91802-1460

Dear Mr. Bapna:

Subject: Draft Program Environmental Impact Report, Sun Valley Watershed Management Plan, Dated October 2003

The Los Angeles Department of Water and Power (LADWP) has received the Los Angeles County Department of Public Works' (County) Draft Environmental Impact Report (DEIR) for the Sun Valley Watershed Management Plan (Plan). LADWP is appreciative for the opportunity to participate as a stakeholder in the Sun Valley Project, and overall we support the goals of the Plan.

11A-1

We are pleased to see that the DEIR recognizes the potential for groundwater contamination resulting from storm water infiltration and the need to ensure that the Plan is protective of groundwater quality. The Plan area encompasses the communities of Sun Valley and North Hollywood and is near the vicinity of LADWP's San Fernando Basin production well fields.

As you are aware, groundwater comprises approximately 15 percent of the City's water supply and existing contamination in the San Fernando Basin along with more stringent water quality standards have impaired the reliability of our groundwater resources. Our primary concern with the DEIR and Plan is that sufficient monitoring, treatment, and oversight take place to properly characterize the design, efficiency, and operation of the storm water Best Management

11A-1 cont'd Practices (BMPs) to ensure that groundwater quality is not adversely impacted. To that effect, we are submitting the following comments regarding the DEIR and Plan:

Draft Program Environmental Impact Report, Sun Valley Watershed Management Plan

Section 3

11A-2 The proposed maximum of 80 feet for dry wells may be excessive. Depending on the depth-to-groundwater, particularly north of the Verdugo Fault, a more appropriate maximum depth for dry wells may be 50 feet. This should be discussed with the Upper Los Angeles Rivera Area Watermaster and LADWP.

11A-3 The DEIR contains a brief description of the proposed Power Line Easement Project Component and preliminary design drawings. Conceptually, LADWP's Power System believes the proposed project could be compatible with the power lines; however, the Power System has general concerns regarding safety, access, ability to perform routine operation and maintenance, potential impacts to the structural integrity of the transmission towers, size and depth of the proposed basins, maintenance of the project, and public acceptance by adjacent residences to the transmission lines. LADWP is agreeable to reviewing and providing comments on this project at the appropriate time once the County has developed a formal proposal.

11A-4 LADWP has repeatedly expressed concerns over the use of the Sheldon Pit as a project component due to the exposed groundwater. Use of the pit for the infiltration of storm water could be in violation of regulatory requirements such as the Surface Water Treatment Rule. The California Department of Health Services (DHS) and the Regional Water Quality control Board (RWQCB) should be able to provide additional information regarding potential regulatory constraints. As has been discussed in the Sun Valley Stakeholder Meetings, the exposed groundwater represents a direct conduit for groundwater contamination and significant mitigation measures would be required to ensure that the use of the pit as a project component does not adversely impact the groundwater quality. Another consideration is that the area of exposed groundwater in the pit fluctuates with the groundwater table. During wet periods when there is significant storm water spreading at the Hansen Spreading Grounds and the water table rises, a substantial amount of the pit bottom can be inundated with groundwater.

11A-5 The project description for LADWP's Valley Generating Station should be updated to reflect the current project proposal. The ultimate success of this project will depend on whether it can be implemented without interfering with the safety, access, operation, maintenance, or structural integrity of the existing Power Generating Station. We look forward to providing comments on the revised project proposal when available.

11A-6 The monitoring plan should indicate the proposed water quality testing methodology and method detection limits.

11A-7 In terms of storm water quality, LADWP is most concerned with storm water runoff from industrial sites and sites under RWQCB investigation for suspected soil or groundwater contamination. To reduce sampling and analysis costs, LADWP recommends that monitoring requirements be reflective of the anticipated storm water quality (i.e., residential sites could have less rigorous monitoring and sampling frequency than industrial sites).

Section 4

11A-8 There is heavy industrial use in the northern portion of the Sun Valley Watershed. LADWP is concerned whether the storm water treatment systems that are briefly discussed in this section provide adequate treatment for storm water emerging from industrial sites to be safely infiltrated. As future project designs are developed, the County must ensure that the proposed water quality treatment systems are appropriate and adequate to treat the expected storm water to acceptable water quality standards. At a minimum, LADWP, the Watermaster, and the appropriate regulatory agencies should be given an opportunity to review and comment on the proposed treatment systems as they are developed in the future.

11A-9 Another concern is the long-term operation and maintenance of the various project components and treatment systems. The DEIR briefly mentions the required maintenance requirements of the proposed projects but does not clearly indicate the party that will ultimately be responsible for ensuring that the long-term operation and maintenance requirements are fulfilled and that the projects and treatment systems are operating as designed.

11A-10 Mitigation Measures H-1 and H-2 are strongly encouraged and supported by LADWP. We are hopeful that the annual vadose zone and groundwater monitoring report proposed in Mitigation Measure W-2 will allow sufficient opportunity to fully evaluate the storm water treatment and infiltration devices to allow for changes, modifications, or elimination of those devices that are not effective or sufficiently protective of the groundwater quality.

General Comments

11A-11 The native safe yield of the San Fernando Basin was established by the Superior Court in Case No. 65 0079, The City of Los Angeles vs. City of San Fernando dated January 26, 1979 (Judgment). Although it is clearly beneficial to increase the infiltration of high quality storm water in the San Fernando Basin, the City will not receive an increase in its native safe yield until it can be demonstrated that there is an increase in the long-term amount of annual recharge resulting from the project above and beyond that recharge already accounted for in the Judgment. We recommend that the County, Watermaster, and LADWP meet to discuss this issue to gain a clear understanding of the water rights in the San Fernando Basin.

Draft Sun Valley Watershed Management Plan

Page 2-17:

- Approximately 15 percent of the water consumed by the City of Los Angeles is from the San Fernando, Sylmar, and Central Basins.
- The safe yield operation requires that the amount of water extracted from the basin is equal to the amount of native and import return water (including recycled water) that recharges the basin.

Page 2-28:

- To partially offset this decrease, the County, in cooperation with LADWP, attempts to optimize the use of the spreading basins to maximize the artificial recharge of the San Fernando Great Basin.
- LADWP in cooperation with the County and the City of Los Angeles Bureau of Sanitation has successfully completed the Phase I Pilot Test and is planning to proceed with the Phase II Pilot Test this winter.

Page 2-19:

- In response to the public health threat, the cities were forced to shut down many of their wells and provide alternative sources of drinking water.

Page 2-25:

- We request that you delete the second paragraph that discusses water reuse goals. The assumptions used to develop those goals have changed and are currently being revised.

Page 3-11 and 3-21:

- See comments above regarding the Valley Generating Station and Power Line Easement Projects.

Page 3-15:

- See comments above regarding Sheldon Pit.

Page 4-10:

- Modify Table 4-3 to include the total expected water conservation (infiltrated and reused), similar to what is shown on Table 4-2.

Page 5-1:

- While LADWP supports the use of household BMPs, the capital cost and annual operation and maintenance costs could be prohibitive. As the text states, household BMPs are in the process of being evaluated. It is premature to consider funding incentives by LADWP and the California Department of Water Resources until the evaluation and Benefit/Cost analysis has been completed and confirmed by the appropriate parties.

We appreciate the opportunity to comment on the DEIR and Plan and support the County's efforts to successfully implement The Sun Valley Watershed Project in an environmentally responsible manner.

If you have any questions, feel free to contact Mr. Mario Acevedo, of my staff, at (213) 367-0932.

Sincerely,

Thomas M. Erb
Director of Water Resources

c: Mr. Mark Mackowski, ULARA Watermaster
Ms. Wendy Phillips, RWQCB
Mr. Stefan Cajina, DHS
Mr. Mario Acevedo, LADWP
Ms. Stacie Nakao, County
Mr. Fred Lantz, City of Glendale
Mr. Don Froelich, City of Glendale

Responses to Letter No. 11 Thomas M. Erb, Director of Water Resources Los Angeles Department of Water and Power

11A-1 LADWP's support for the goals of the Watershed Management Plan is appreciated.

11A-2 In response to your comment, drywells installed as part of the Watershed Management Plan will be designed to ensure that the bottom of the drywell is at least 20 feet above the last 30-year high groundwater level. Please see revised EIR Section 3.4.3.3.

11A-3 Prior to implementation of the Power Line Easement project component, and at the time that the project is undergoing project-level CEQA review, LACDPW will coordinate further with LADWP to review site-specific design and address potential issues.

11A-4 As described in response to comment 4-2, under the Watershed Management Plan, disposal of gravel washwater to an area with exposed groundwater is not proposed at Sheldon Pit. Design of this project component will include filling the existing gravel pit with approximately 90 feet of soil, and therefore in effect creating a vadose zone. This vadose zone is of sufficient depth to accommodate variations in groundwater levels from operation of Hansen Spreading Grounds.

Regarding compliance with the Surface Water Treatment Rule, please see response to comment 7A-1.

11A-5 The Valley Steam Plant project component is described in the EIR at a conceptual level. Project-level CEQA review of this project will take place at the appropriate later time. The locations and shapes of the proposed basins and pipelines as shown in Figures 3-23 and 2-24 will be modified to address issues related to safety, access, operation and maintenance, and structural integrity of existing power plant facilities. LACDPW will continue to coordinate with LADWP to develop the design for this project component, and will consult with LADWP during project-level CEQA review of this project.

11A-6 Site-specific monitoring plans developed during project design will specify water quality testing methodology and detection limits. Please also see response to comment 4-5.

11A-7 The monitoring plans will be developed in consideration of the anticipated stormwater quality at each project site, taking into account site-specific conditions such as drainage area land use. Please also see response to Comment No. 4-5.

11A-8 As the design of each project component, including treatment systems, is more specifically developed, Stakeholders (including the Regional Board, Watermaster, and others) will have opportunities for review and comment. In addition, for components where second tier CEQA documentation is prepared, lead agencies will be required to consult with responsible agencies as relevant.

11A-9 The lead agency for each of the individual project components is not currently known. As design of each project component is more specifically defined, the agency responsible for long-term operation and maintenance of the proposed facilities, including stormwater treatment systems, will be identified (e.g., in a memorandum of understanding or other agreement). As this information is available, it will be shared with the Stakeholders. During project-level CEQA review of each project component, the identified agency will be disclosed to the Stakeholders, and long term operations of each project will be discussed.

11A-10 LACDPW acknowledges LADWP's support for Mitigation Measures H-1 and H-2. Please also note that a new mitigation measure (W-4, EIR Section 4.7.7) has been incorporated (see response to comment 4-4).

11A-11 LACDPW is agreeable to meeting with LADWP and the ULARA Watermaster to discuss issues related to water rights in the San Fernando Basin and stormwater infiltration.

11B LADWP's comments on the Draft Watershed Management Plan have been reviewed and incorporated into the Final Watershed Management Plan.

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CITY OF LOS ANGELES
CALIFORNIA

ENVIRONMENTAL AFFAIRS DEPARTMENT

DETRICH B. ALLEN
GENERAL MANAGER

200 NORTH SPRING STREET
SUITE 2005, MAIL STOP 177
LOS ANGELES, CA 90012
(213) 978-0888

JAMES K. HAHN
MAYOR

Comment Letter No. 12

December 8, 2003

Mr. Vik Bapna, Senior Civil Engineer
County of Los Angeles Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

Subject: Draft Program EIR for the Sun Valley Watershed Management Plan

Dear Mr. Bapna:

Thank you for the opportunity to review and comment on the Sun Valley Watershed Management Plan and its Draft Program Environmental Impact Report. We have completed our review. We commend your efforts over the past five years to bring a diverse group of stakeholders into the process. Undoubtedly, their involvement contributed to the high quality of this plan, and this process should serve as a model for the development of other watershed management plans.

We have some concerns regarding the assessment of Strathern Pit in the EIR. We also offer several minor editorial suggestions on the Management Plan. These comments are provided in the attachments.

If you have any questions or comments, please contact me at (213) 978-0840.

Sincerely

for DBA

Detrich B. Allen

Attachments (2)

H:Sun Valley\Letter to Vik Bapna--December 2003.doc

Comment Letter No. 12A

Attachment 1

City of Los Angeles Environmental Affairs Department
Comments on the Sun Valley Watershed Management Plan **Draft EIR**

12A-1 EIR Section 3.4.11, pages 3-28 through 3-30: One component of the Sun Valley Watershed Management Draft EIR involves Strathern Pit, which is an active, inert debris landfill. The Plan is to convert Strathern Pit into a surface storm water retention and treatment area. The project description, in section 3.4.11.1, states that an inert landfill is located to the west, across Tujunga Avenue, from Strathern Pit. We believe this to be the Penrose Landfill, which is located directly west of Strathern Pit. If this is true, it should be named in the EIR. It also should be noted that the Penrose Landfill is not an inert landfill, but rather it is a closed sanitary landfill. This sanitary landfill was officially closed in 1997 and is currently being used as a remote control raceway and a practice golf center as part of its post-closure end uses. Regulatory oversight of this landfill is the responsibility of the City of Los Angeles Environmental Affairs Department Local Enforcement Agency.

12A-2 As a closed sanitary landfill, the owners are still responsible for long-term, post-closure maintenance of the site. While there are a number of tasks to be accomplished as part of this care, this discussion will address only those items at this site that may have a potentially significant environmental impact: leachate control and landfill gas management.

Leachate is typically a soluble organic waste that may contain inorganic constituents created by the movement of water through solid wastes. We are concerned that the Strathern Pit project has the potential to cause increased generation of leachate and consequent water contamination through subsurface infiltration (run-on) due to the retention/treatment area's proximity to the sanitary waste landfill. The EIR should address the potential for the generation of leachate from water filtrating through the inert landfill located underneath the retention/treatment area and from water infiltrating into the adjacent Penrose Landfill and for methods of preventing such an event.

We also believe the EIR needs to address the potential for the Strathern Pit project to impact Landfill Gas (LFG) management and potentially impact the surrounding community. Landfill Gas is a by-product of waste decomposition. While LFG generation and composition will vary, a major constituent of LFG with a potential for significant impact is methane (CH_4). Methane gas is explosive and combustible depending on its relative concentration in air. The Penrose Landfill has an active LFG management system in place that includes gas collection and flaring. This system has adequately prevented dangerous methane gas buildup at Penrose Landfill. As discussed in Section 4.7.3.2, large amounts of water infiltration in a spreading ground adjacent to municipal solid waste landfill has been associated with landfill gas migration problems at Sheldon-Arleta Landfill. The potential impacts of using the Strathern Pit and/or Calmat Gravel Pit should be further analyzed to determine if water infiltration at these locations would affect the landfill gas management systems at the adjacent unlined portions of the Penrose Landfill and at the nearby Bradley Landfill.

Comment Letter No. 12B

Attachment 2

City of Los Angeles Environmental Affairs Department
Comments on the Sun Valley **Watershed Management Plan**

We offer the following minor editorial comments for your consideration. We expect you may have addressed some of these already, but we list them here to assist you to identify potential changes.

- Figures ES-3, B-1, B-2, B-3, and B-4 all show street flow and lateral storm drain flows as separate but indistinguishable. The reason for this appears to be that street flow would occur only when flow exceeds the capacity of the lateral storm drains. If this is correct, we believe it would be beneficial to indicate this in the figures or their captions. If it is not correct and street flow and lateral storm drains are not physically in all the same locations, we believe it would be helpful to more clearly distinguish between them in the figures.
- The City of Los Angeles, Environmental Affairs Department (EAD) has routinely participated in the stakeholder process for a considerable length of time, but this is not reflected in Table 1-1. Is this table intended to reflect only long-term participation or participation with which EAD was not involved?
- Section 1, abbreviations: Add MCL
- We noticed a number of inconsistencies regarding references in the document. For example, on page 2-6 the first line of text references the Sun Valley Community Plan as "City of Los Angeles, 1999." In the next to last line of text, what appears to be the same plan is references as "1999." By referring to it as "the Sun Valley Community Plan (1999)" it suggests this reference would be found under "Sun Valley" as the author. It is listed in the references (Appendix A) under "Los Angeles, City of, 1999." All of these should be made consistent.
- Page 2-8, fifth line under "Rainfall and Runoff" reads "According to LACDPW Annual Hydrologic Report (2002), the ..." This report is not included in the references (Appendix A).
- Page 2-9, 4th line of text: The reference needs a comma after LACDPW to become (LACDPW, 1989).
- Page 2-15: The CWA Section 303(d) report is referenced here as "SWRCB, 2002" and in Appendix A as "SWRCB, 2003." This is the 2002 303(d) list, but the January 2003 version is referenced..
- Page 2-16: The second full sentence should read "The data are..." rather than "The data is..." The next paragraph refers to "the County's study (2000)..." This suggests the County released a report in 2000. If so, it is not included in the references. There is, however, a reference for a report released in 2001. This appears to be the one referred to here. If so, the reference needs to be clarified. Finally, the "Groundwater" Section has a "USEPA 2002" reference. There are

two such reports. It is desirable to distinguish between them. This is often done by designating one as "USEPA 2002a" and the other as USEPA, 2002b."

- Page 2-18: The next to last paragraph indicates Figure 2-1 shows the locations of the Tujunga and Hansen Spreading Grounds. They are in this figure, but it would be helpful to identify them in the figure because the figure's small print makes finding them very difficult.

- Figure 2-15: The source (LADWP, 2002) is not included in the references (Appendix A).

- Table 2-3: The sources (SCAQMD, 2000 and SCAQMD, 2002) are not included in the references (Appendix A).

- Page 3-4: The last line should have the word "in" removed to make it read "...size of every component that is included at least once in the final four sample alternatives..." rather than "...size of every component that is included **in** at least once in the final four sample alternatives..."

- Figure 3-1: Street storage is difficult to see in this figure. It would be easier to see if the color could be changed from gray on gray to one with greater contrast.

- Page 3-11: The word "and" should be removed from the end of the sentence ending on the fourth line from the bottom of the page or the missing text should be added.

- Page 3-17: 1) The second paragraph refers to USEPA, 1999. Appendix A does not include this reference. 2) The third full paragraph refers to a retention basin with a volume of 500 acre-ft. Table 3-3 lists two retention basins, a 286 acre-ft Stormwater Retention Basin and a 736 acre-ft Transfer Retention Basin. The third full paragraph appears to refer to the Transfer Retention Basin, but regardless of which retention basin is referenced, the volumes are not in agreement. 3) The third full paragraph on page 3-17 addresses the diversion of Tujunga Wash stormwater into Sheldon Pit. You indicate this will have no detrimental net impact on flood hydrology in the Los Angeles River. Because Sun Valley runoff is likely to have lower water quality than Tujunga Wash water it seems that a discussion of this project on Los Angeles River water quality, especially during a Capital Storm, should be included also. .

- Strathern Pit, Site Description, pp 3-17 & 3-18: It states, "This pit/landfill facility has the potential to be converted to a multi-purpose park that includes a retention basin and a constructed wetland. How much of this 30-acre site would function as a retention basin during a 50-year frequency storm?

- Page 3-21: Presumably the sedimentation basins would require periodic cleaning. If so, it would be helpful to state this and to discuss any special treatment, such as hazardous waste disposal, expected to be needed.

- Table 3-8: In this table areas are given in acres, infiltrator volume in cubic feet, and 50-year storm volume in acre-ft. These different units make comparisons difficult. It would be helpful to state either in the text or in the table, the tributary area and water volume to be infiltrated during the 50-year storm for each alternative. This was done for Stonehurst School in the description of project elements and operation (top of page 3-29).

- Page 3-33: The USEPA, 1999 citation is not in the references (Appendix A).
- Page 3-38: The ASCE, 1998 citation is not in the references (Appendix A).
- Page 3-39: The Pitt, 1996 citation should be Pitt et. al., 1996 (Appendix A).
- Page 5-8: Please add City of Los Angeles, Environmental Affairs Department and City of Los Angeles, Public Works Department, Bureau of Street Services as agencies involved with tree planting. Also, the word "in" at the end of the 3rd line of the second paragraph of the "Environmental Documentation" Section appears to have been inadvertently left from an earlier draft and should be removed
- Page 5-22: The SCAQMD, 2000 and SCAQMD, 2002 citations are not included in the references (Appendix A).
- Page A-1: The sixth reference is RWQCB (2002). This appears to be a reference for the Los Angeles Regional Board. All other Los Angeles Regional Board references are listed as LARWQCB (bottom page A-2 and top of page A-3). If this is correct, the citations should be standardized. Also, there is a LARWQCB, 2002 reference. If both of these are 2002 Los Angeles Regional Board references and both are cited in the document, they should be distinguished such as 2002a and 2002b. If this is not the case, some clarification is still required.
- The following references were not found cited in the text, however, they may have simply been missed. An electronic document search should quickly determine if they were cited.
    - Los Angeles, City of, 1992
    - LACDPW, 2001
    - MWH, 2003 (This refers to Technical Memorandum No. 5. All five technical memoranda are referred to in Section 4, but none are referenced like this.)

Responses to Letter No. 12 **Detrich B. Allen, General Manager**
City of Los Angeles Department of Environmental Affairs

12A-1 EIR Section 3.4.11 has been revised to incorporate the information regarding Penrose Landfill provided by the City of Los Angeles Environmental Affairs Department. Please also see responses to Comment Nos. 12A-2, 4-2 and 4-4.

12A-2 Under the Watershed Management Plan, infiltration of stormwater is not proposed at Strathern Pit. The stormwater management facilities at Strathern Pit would be lined with impervious material to prevent infiltration (EIR Section 3.4.11.3). Therefore, implementation of the Strathern Pit project component is not anticipated to generate leachate from infiltration of onsite inert landfill material or sanitary landfill material at the adjacent Penrose Landfill.

Analysis of impacts on groundwater levels due to project infiltration was conducted by LADWP using a hydrologic model (EIR Section 4.7.6.3.3). Modeling results showed that, overall, the infiltration proposed by the project would have minimal impact on groundwater levels and flow direction. Therefore, project infiltration, including at Sheldon Pit and Cal Mat Pit, is not expected to inundate landfill materials or impact landfill gas releases (i.e., alteration of existing landfill gas migration pathways) at area landfills, including Penrose Landfill and Bradley Landfill. However, based on comments from the City of Los Angeles Environmental Affairs Department as well as the Regional Board, DHS, ULARA Watermaster, and LADWP, an additional mitigation measure (W-4, EIR Section 4.7.7) has been incorporated to establish an "alert level" for groundwater elevation below project sites located adjacent to landfills (as determined by site-specific environmental site assessments; see Mitigation Measure H-1, EIR Section 4.5.4). Under this mitigation measure, project infiltration would cease when monitoring indicates that groundwater levels have risen to the alert level (defined as within 10 feet of landfill materials), which would prevent infiltrated stormwater from interacting with the landfill materials and impacts to landfill gas releases. In addition, Mitigation Measures W-3 and W-5 (EIR Section 4.7.7) will be implemented to prevent inundation of landfill materials and impacts to landfill gas management systems specifically at Bradley Landfill and Sheldon-Arleta Landfill, respectively. Please also see responses to Comment Nos. 4-2 and 4-4.

12B City of Los Angeles Department of Environmental Affairs' comments on the Draft Watershed Management Plan have been reviewed and incorporated into the Final Watershed Management Plan. Section 2.1.2, Figures 1-1 and 3-2, and Table 3-8 (Section 3.7) of the EIR have been correspondingly revised to incorporate these comments on the Watershed Management Plan.

BOARD OF
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WATERSHED PROTECTION DIVISION
2714 MEDIA CENTER DRIVE
LOS ANGELES, CA 90065
TEL: (323) 342-1501
FAX: (323) 342-1511

December 3, 2003

Comment Letter No. 13

Vik Bapna, Senior Civil Engineer
County of Los Angeles Department of Public Works
Watershed Management Division
PO Box 1460
Alhambra, CA 91802-1460

DRAFT PROGRAM EIR FOR THE SUN VALLEY WATERSHED MANAGEMENT PLAN

13-1

The City of Los Angeles, Department of Public Works, Bureau of Sanitation, Watershed Protection Division (WPD) has received the draft Sun Valley Watershed Management Plan and the accompanied Environmental Impact Report (EIR). We would like to congratulate the project team and all stockholders for their vision and leadership role. After reviewing both the draft plan report and the EIR, we do not have any comments at this time.

The proposed watershed management plan provides a blueprint for a multi-purpose flood control program to solve the local flooding problem while increasing water conservation, recreational opportunities, and wildlife habitat, and reducing stormwater pollution. We understand the administrative, technical, and social complexities associated with developing such a plan, especially when it involves a diverse group of stakeholders. We believe the plan will serve as a model for future watershed management plans for the greater Los Angeles Area.

Should you have any questions please contact Morad Sedrak at (323) 342-1577.

Sincerely,

Shahram Kharaghani, Ph.D., P.E.
Program Manager

SK/MFS/KK/MC:eva
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cc: James F. Langley, Interim Director, Bureau of Sanitation

Responses to Letter No. 13 **Shahram Kharaghani, Ph.D., P.E., Program Manager**
City of Los Angeles Department of Public Works
Watershed Protection Division

13-1 The City Department of Public Works' support for the project is appreciated.

Los Angeles Unified School District

ROY ROMER
Superintendent of Schools

ANGELO J. BELLOMO
Director,
Office of Environmental Health and Safety

December 8, 2003

Comment Letter No. 14

Mr. Vik Bapna
County of Los Angeles Department of Public Works
Watershed Management Division
P.O. Box 1460, Alhambra, CA 91802-1460

Dear Mr. Bapna:

The Los Angeles Unified School District (District), Office of Environmental Health and Safety (OEHS) has reviewed the draft program Environmental Impact Report (EIR) and the Watershed Management Plan for the proposed flood control improvements within the Sun Valley Watershed. Upon the review, the District has the following comments regarding the proposed improvement of the Sun Valley Watershed:

General Comments

14-1 1. How will the County monitor and prevent migration of methane from old landfills that may be impacted by the infiltration operations, particularly the Bradley landfill?

14-2 2. How will the county prevent mosquito infestation from the proposed wetland areas near school sites? In particular, Roscoe Elementary School that is located adjacent to the Strathern Pit and its proposed wetland could be impacted by an increase in mosquitoes.

14-3 3. How will the County secure proposed ponds and wetlands from children?

Comments Regarding Construction of Proposed Flood Control Structures On-campus or Near Campus (Sun Valley Middle School, Roscoe Elementary School and Stonehurst Avenue Elementary School)

14-4 4. How will dust emissions be monitored and controlled during construction of the proposed storm water control features on or adjacent to school campuses?

5. How will vehicle emissions be monitored and controlled during construction of the proposed storm water control features on or adjacent to school campuses?

14-5 6. How will noise be monitored and controlled during construction of the proposed storm water control features on or adjacent to school campuses?

14-6 7. How will the County ensure construction site security during construction?

14-7 8. How will the County implement control and ensure safety to staff and students from traffic entering and leaving the construction sites?

14-8 9. How will the construction of the storm water collection structure on campus impact the rest of the school?

10. How will the construction of the storm water collection structure on campus impact the use of the sports fields at Sun Valley MS and the open areas at Roscoe ES and Stonehurst Avenue ES?

14-9 11. Who will be responsible for the removal and disposal of excavated soils from each school campuses?

12. How will the County select disposal options for excavated soils?

13. If soils are to be imported, how will the County ensure that the soils are clean and do not pose a hazard to students and staff on-site?

14. The District prefers to have soils being imported or exported from any construction sites on District property to follow District protocol.

14-10 15. The District would like to review and approve the use of materials to be used for the construction of the storm water control structures prior to installation in accordance with District protocol to ensure the health and safety of students and staff. Particularly, the District would like to review Materials Health and Safety Data sheets (MSDS) of proposed materials to be used in the structures.

Comments Regarding Operation and Maintenance of Proposed Flood Control Structures On-campus or Near Campus (Sun Valley Middle School, Roscoe Elementary School and Stonehurst Avenue Elementary School)

14-11 16. LAUSD objects to installing any chlorine gas-based disinfection system on any school campus because of the risk for potential chlorine gas releases. If any disinfection system is to be installed on any campus or adjacent to any campus, a system that does not use hazardous materials is preferred.

14-12 17. Will the operation of the disinfection system impact operations at the schools and if so, what impacts can be anticipated?

14-13 18. Who will be legally responsible for storm water run-off entering the school campuses?

19. What will be the liability to the LAUSD from allowing off-site storm water entering LAUSD property that could be potentially impacted by hazardous constituents?

14-14 20. Will API oil/water separators be installed to capture free oil and grease that may be transported with the storm water?

14-14 cont'd

21. Will the oil/water separators have enough capacity to treat all waters even during a 50-year flood event?

22. Will the oil/water separators be installed in such a fashion that it will not be flooded?

14-15

23. Will excess floodwater from extreme flooding events be diverted from the school campuses in case the amount of flood waters exceed the maximum designed capacity of the proposed flood control systems?

14-16

24. Will there be a program to monitor storm water quality and if so, what parameters are proposed to be monitored?

25. Will the County monitor infiltrated water and recharged groundwater for nitroso-dimethylamine (NDMA), trihalomethanes, or any other constituents of concern that may form through chlorination of water?

26. How often will the storm water be monitored?

27. Who will be responsible for the monitoring programs?

14-17

28. Who will be responsible for developing environmental health and safety procedures for the oversight and maintenance of the proposed structures on-campus?

29. How often will the structures be inspected and monitored?

30. What kind of maintenance operation will be needed to keep the structures operational and who is going to perform these?

31. Will oversight and maintenance of the structures impact the schools, and if so, what kind of impact can be expected?

32. Who will monitor and maintain security structures such as fences, gates etc?

33. Who will be the physical owner of the system and associated structures, will the County own it all or will LAUSD be responsible for some portions ot thr structures, such as security installations, etc?

Comments Regarding Operation and Maintenance of Proposed Flood Control Structures at Sun Valley Middle School

14-18

34. The school is located within the administrate boundaries of the San Fernando Superfund site, Area 1, Operable Unit 1. Chlorinated solvents have been detected in groundwater beneath the site. What safeguards will be implemented to prevent contaminants from entering the infiltration system and potentially adding to the groundwater impact?

14-19

35. There were underground storage tanks at the bus garage, now removed and a fuel oil underground storage tank at the school left in place. These underground storage tanks have been closed with the Regional Water Quality Control Board, but acceptable residual soil impact may exist. Are there plans to perform further investigations and modeling to prevent infiltration in areas where residual soil impact may exist?

36. There is a former landfill beneath the bus garage. Could increased infiltration impact this former landfill, and if so, what mitigation measures would be proposed?

If you have any questions regarding the responses above to the EIR or the Watershed Management Plan for the Sun Valley Watershed, please contact Mr. Christer Loftenius at tel. (213) 241-3930, fax (213) 241-3327, or e-mail christer.loftenius@lausd.net

Sincerely,

Office of Environmental Health and Safety
Los Angeles Unified School District

Christer Loftenius

Christer Loftenius, R.G. C.HG. REA
Environmental Assessment Coordinator

cc: Jay Golida, General Counsel
Pat Schanen, OEHS
Jay Brakensiek, OEHS
Bill Piazza, OEHS
Ray Dipple, OEHS

Responses to Letter No. 14 Christer Loftenius, R.G., C.HG., REA, Environmental Assessment Coordinator Los Angeles Unified School District

14-1 Analysis of impacts on groundwater levels due to project infiltration was conducted by LADWP using a hydrologic model (EIR Section 4.7.6.3.3). Modeling results showed that, overall, the infiltration proposed by the project would have minimal impact on groundwater levels and flow direction. Therefore, project infiltration is not expected to inundate landfill materials or impact landfill gas releases (i.e., alteration of existing landfill gas migration pathways) at area landfills. However, based on comments provided on the Draft EIR, an additional mitigation measure (W-4, EIR Section 4.7.7) has been incorporated to establish an "alert level" for groundwater elevation below project sites located adjacent to landfills (as determined by site-specific environmental site assessments; see Mitigation Measure H-1, EIR Section 4.5.4). Under this mitigation measure, project infiltration would cease when monitoring indicates that groundwater levels have risen to the alert level (defined as within 10 feet of landfill materials), which would prevent infiltrated stormwater from interacting with the landfill materials and impacts to landfill gas releases. In addition, Mitigation Measures W-3 and W-5 (EIR Section 4.7.7) will be implemented to prevent inundation of landfill materials and impacts to landfill gas management systems specifically at Bradley Landfill and Sheldon-Arleta Landfill, respectively.

14-2 Please see EIR Sections 4.5.1.4 and 4.5.4, and Mitigation Measure H-3 regarding mitigation for project-related creation of mosquito habitat.

14-3 The project components at school sites do not include creation of ponds or wetlands. If modifications proposed at school sites would result in standing water, these areas will be fenced or otherwise secured. EIR Section 4.5.3.4 has been revised to incorporate this information. Created wetlands and/or ponds at non-school project sites will likely be open to public access, as is common practice at parks.

14-4 Mitigation measures to reduce dust and vehicle emissions during project construction are identified in EIR Section 4.1.4. These mitigation measures will be implemented during construction of all Plan projects, including those on or adjacent to school campuses. The construction impacts on sensitive receptors at school campuses will be less than significant after mitigation, as discussed on page 4.1-12.

14-5 Mitigation measures to reduce noise during project construction are identified in EIR Section 4.8.5. As discussed on page 4.8-9, the construction impacts on sensitive receptors are not expected to be significant. Additionally, standard LACDPW practice is to have a construction inspector onsite, who will be responsible for coordinating with the school's administrator(s) regarding noise and other construction related impacts (see Mitigation Measures N-4 and P-7).

14-6 The contractor will be required to comply with existing County standards (as listed in the current edition of the Standard Specifications for Public Works Construction) regarding site security during construction.

14-7 As described in EIR Section 4.11.7, a construction traffic management plan will be developed for each project site (Mitigation Measure T-1). The traffic management plan for project sites at or near schools will be developed in consultation with LAUSD and would address safety of staff and students. Please also see Mitigation Measures P-5 through P-10 and P-12 (EIR Section 4.9.4).

14-8 The Plan's impact during construction on these facilities was discussed in Section 4.10.3.1, and was determined to be less than significant. However, as set forth in Section 4.10.5, further analysis of the temporary closures necessary at these sites during construction will have to be conducted. At that time of project design, specific construction schedules and phasing at project component schools will be developed in coordination with LAUSD to minimize impacts on the use of school facilities (e.g., sports fields).

14-9 The construction contractor will be responsible for removal and disposal of excavated soils, including selection of disposal options. The construction inspector will be responsible for ensuring that imported soils would not pose a hazard to students and staff at school sites. These are standard LADPW practices. The County or the project proponent will coordinate with LAUSD to comply with District protocol regarding import and export of soils for construction at school sites.

14-10 If potentially hazardous materials would be used in the construction or operation of stormwater management facilities, the County or the project proponent agency will provide relevant Materials Safety Data Sheets to LAUSD for review and approval.

14-11 If a disinfection system is required at a project component site, including school sites, ultraviolet (UV) irradiation or sodium hypochlorite would be used. Gaseous chlorine will not be used on school sites. UV disinfection does not involve use of hazardous materials. Liquid sodium hypochlorite, a concentrated form of household bleach, is a commonly used chemical and does not pose substantial risks to public health and safety if handled and stored properly (see EIR Section 4.5.3.1).

14-12 Operation of the disinfection system would require minor periodic maintenance. This would generally be completed by one maintenance staff person. Impacts to ongoing school operations would be minimal.

14-13 An agreement (e.g., Memorandum of Understanding) between LAUSD and the project lead agency will be developed to address liability issues and identify the legal responsibilities associated with stormwater entering school sites.

14-14 Stormwater separation devices will be installed at all infiltration sites (including all school sites) to remove both settlable (e.g., sediments and grit) and floatable (e.g., oil and grease) materials from stormwater prior to infiltration. These systems will have sufficient capacity to treat all diverted flows.

14-15 In the event of extreme flood events that exceed the design capacity of proposed stormwater management facilities, the excess water would be diverted away from the school campuses and would continue to flow along the pre-project flow paths that include existing storm drains and/or surrounding streets.

14-16 Regarding the monitoring program for the Watershed Management Plan project components, please see response to comment 4-5. Please note that under the Watershed Management Plan, chlorination is proposed only for stormwater reuse for irrigation. Stormwater to be infiltrated under the project will not be chlorinated.

14-17 The operation and maintenance of the proposed structures at school sites will be specified in an agreement (e.g., Memorandum of Understanding) between LAUSD and the project lead agency. The agreement will identify the party responsible for environmental health and safety procedures, frequency of structure inspection and maintenance, monitoring and maintenance of security structures, and ownership of proposed structures. Typical maintenance activities required for stormwater management facilities include sediment removal with a vacuum extractor, replacement of filter cartridges (if any), maintenance of the chlorination system, and mechanical maintenance (e.g., pumps and valves). Impacts on schools from the periodic maintenance activities (e.g., temporary increase in noise) are anticipated to be minor.

14-18 Regarding potential impacts of the project on groundwater, please see EIR Section 4.7.6.3. Impacts on the existing contamination in the San Fernando Basin are specifically addressed in Section 4.7.6.3.3.

14-19 As described in Mitigation Measure H-1 (EIR Section 4.5.4), site-specific evaluations of onsite and adjacent land uses will be conducted for each project component to determine site-specific potential for soil contamination. Due to the presence of the underground storage tanks and the former landfill under the bus garage, a Phase 2 Environmental Site Assessment, which would include soil sampling, will be conducted at the Sun Valley Middle School project component site. A new mitigation measure (W-4, EIR Section 4.7.7) has been incorporated to address potential groundwater quality impacts associated with project infiltration near landfills. EIR Section 4.5.3.1 has been revised to acknowledge the potential for soil contamination near the former landfill under the bus garage.

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TARGHEE, INC.
ENVIRONMENTAL CONSULTING

Comment Letter No.15

December 8, 2003

Mr. Vik Bapna
County of Los Angeles
Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

Re: Draft Environmental Impact Report ("DEIR")
Sun Valley Watershed Management Plan

Dear Mr. Bapna:

Targhee has reviewed the above-referenced document and has the following comments:

15-1

1. The potential environmental impacts of a rise in the groundwater elevations in the project area on closed landfills in the area were not addressed. The DEIR acknowledges the potential impacts of methane migration from the active Bradley landfill due to rising groundwater elevations, but no others are addressed. It is uncertain if rising groundwater will intercept landfill disposal areas directly. If it does, groundwater contamination would be significant. Targhee suggests that the California Integrated Waste Management Board be contacted regarding closed landfills in the project area.

15-2

2. The Strathern Pit landfill is proposed as a retention basin for stormwater runoff, a multi-purpose park and a constructed wetland. Closed sanitary landfills are located adjacent and in the vicinity of the Strathern Pit. Impacts from infiltrating stormwater to this closed landfill were not evaluated.

If you have any questions regarding these comments, please don't hesitate to call me at 562y-435-8080.

Sincerely,

Dave Broadbent
Environmental Consultant

110 Pine Avenue, Suite 925 • Long Beach, CA 90802-4455 • (562) 435-8080 FAX (562) 590-8795
www.targheeinc.com

Responses to Letter No. 15 Dave Broadbent, Environmental Consultant Targhee, Inc.

15-1 Section 4.7.6.3.3 has been revised to identify known historical landfills in the project area based on a review of the California Integrated Waste Management Board's database.

Under the Watershed Management Plan, infiltration of stormwater is not proposed at Strathern Pit. The stormwater management facilities at Strathern Pit would be lined with impervious material to prevent infiltration (EIR Section 3.4.11.3). Therefore, implementation of the Strathern Pit project component is not anticipated to generate leachate from infiltration of onsite inert landfill material or sanitary landfill material at the adjacent Penrose Landfill.

Analysis of impacts on groundwater levels due to project infiltration was conducted by LADWP using a hydrologic model (EIR Section 4.7.6.3.3). Modeling results showed that, overall, the infiltration proposed by the project would have minimal impact on groundwater levels and flow direction. Therefore, project infiltration, including at Sheldon Pit and Cal Mat Pit, is not expected to inundate landfill materials or impact landfill gas releases (i.e., alteration of existing landfill gas migration pathways) at area landfills, including Penrose Landfill and Bradley Landfill. However, based on comments from the City of Los Angeles Environmental Affairs Department as well as the Regional Board, DHS, ULARA Watermaster, and LADWP, an additional mitigation measure (W-4, EIR Section 4.7.7) has been incorporated to establish an "alert level" for groundwater elevation below project sites located adjacent to landfills (as determined by site-specific environmental site assessments; see Mitigation Measure H-1, EIR Section 4.5.4). Under this mitigation measure, project infiltration would cease when monitoring indicates that groundwater levels have risen to the alert level (defined as within 10 feet of landfill materials), which would prevent infiltrated stormwater from interacting with the landfill materials and impacts to landfill gas releases. In addition, Mitigation Measures W-3 and W-5 (EIR Section 4.7.7) will be implemented to prevent inundation of landfill materials and impacts to landfill gas management systems specifically at Bradley Landfill and Sheldon-Arleta Landfill, respectively. Please also see responses to Comment Nos. 4-2 and 4-4.

15-2 Under the Watershed Management Plan, infiltration of stormwater is not proposed at Strathern Pit. The stormwater management facilities at Strathern Pit would be lined with impervious material to prevent infiltration (EIR Section 3.4.11.3). Therefore, implementation of the Strathern Pit project component is not anticipated to generate leachate from infiltration of onsite inert landfill material or sanitary landfill material at the adjacent Penrose Landfill. Please also see responses to comments 12A-1 and 12A-2.

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Via Messenger & Facsimile

December 8, 2003

Mr. Vik Bapna
County of Los Angeles
Department of Public Works
Watershed Management Division
P.O. Box 1460-
Alhambra, CA 91802-1460

Comment Letter No. 16

Re: Draft Environmental Impact Report ("DEIR")
Sun Valley Watershed Management Plan

Dear Mr. Bapna:

16-1 This office represents Los Angeles By Products ("LABP"), owner of the Strathern Pit identified in the DEIR and, as such, submits this letter on behalf of LABP. Concurrently herewith, Targhee Inc. has submitted comments with respect to the DEIR. We incorporate those comments herein and assert them on behalf of LABP and request not only response to said comments but also that responsive action be taken so as to avoid unanticipated and unmitigated environmental consequences arising from the implementation of the Sun Valley Watershed Management Plan in the vicinity of the Strathern Pit.

Thank you for your attention in this regard.

Very truly yours,

John S. Peterson

JSP: rkc
Encls.
cc: Michael R. McAllister
Lawrence Meyer, Esq.

TARGHEE, INC.

ENVIRONMENTAL CONSULTING

Attachment to
Comment Letter No. 16

December 8, 2003

Mr. Vik Bapna
County of Los Angeles
Department of Public Works
Watershed Management Division
P.O. Box 1460
Alhambra, CA 91802-1460

Re: Draft Environmental Impact Report ("DEIR")
<u>Sun Valley Watershed Management Plan</u>

Dear Mr. Bapna:

Targhee has reviewed the above-referenced document and has the following comments:

1. The potential environmental impacts of a rise in the groundwater elevations in the project area on closed landfills in the area were not addressed. The DEIR acknowledges the potential impacts of methane migration from the active Bradley landfill due to rising groundwater elevations, but no others are addressed. It is uncertain if rising groundwater will intercept landfill disposal areas directly. If it does, groundwater contamination would be significant. Targhee suggests that the California Integrated Waste Management Board be contacted regarding closed landfills in the project area.

2. The Strathern Pit landfill is proposed as a retention basin for stormwater runoff, a multi-purpose park and a constructed wetland. Closed sanitary landfills are located adjacent and in the vicinity of the Strathern Pit. Impacts from infiltrating stormwater to this closed landfill were not evaluated.

If you have any questions regarding these comments, please don't hesitate to call me at 562y-435-8080.

Sincerely,

Dave Broadbent
Environmental Consultant

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Responses to Letter No. 16 John S. Peterson
Law Offices of John S. Peterson

16-1 Responses to comments by Targhee, Inc. are provided above (Comment letter No. 15).

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TREEPEOPLE

December 8, 2003

Comment Letter No. 17A

Mr. Vik Bapna, Project Manager
Sun Valley Watershed Project
L.A. County Department of Public Works
900 S. Fremont Avenue, 11th Floor
Alhambra, CA 91803

re: Draft Program EIR for the Sun Valley Watershed Management Plan

Dear Mr. Bapna,

As a charter member of the Sun Valley Watershed Stakeholders Group, TreePeople congratulates you and the department on the preparation of a multipurpose management plan for the watershed. We welcome this opportunity to make the following comments on the plan's Draft PEIR.

Section 1 Executive Summary

17A-1 The chart on page **1-7**, and related text elsewhere throughout the document, should acknowledge the significant flood control, water conservation and water quality benefits of tree planting and mulching.

17A-2 The plan's beneficial impacts, as listed in Section **1.8.1**, should be amended to include water conservation (through capture for reuse and reduction in import demand).

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Section 3 Project Description

17A-3 Sun Valley Middle School is described in Section **3.4.13** as serving approximately 2600 students. LAUSD's profile for the school indicates a 2002-03 student body of roughly 3100. distributed in three tracks (http://search.lausd.k12.ca.us/cgi-bin/fccgi.exe?w3exec=school.profile.content&which=8396).

17A-4 Section **3.4.14.2** discusses the objectives of the plan's Tree Planting and Mulching component. The text implies that the "limited flood control benefits" of these two practices are to be derived solely through increasing the area of permeable surface. But tree canopies and root systems also provide significant temporary storage of rainwater and runoff. The necessary tree wells can be designed to further enhance water capture. Mulch beds can slow runoff, provide initial filtering and hold runoff for infiltration.

17A-5 The expected participation rate of 20-40% cited in Section **3.4.14.3** can only be achieved with a coordinated outreach and education effort, which should be added to the description of this project component. Programs training homeowners to retrofit their own properties, and residents to organize neighborhood tree-planting projects, have already been implemented in Sun Valley and should be included in the description.

17A-6 The tree species called out are good choices for street planting, but none of them is a Southern California native. A sustainable and integrated approach to watershed management should include at least some tree species native to the area. These would more effectively provide habitat for native animal species and reduce irrigation needs in our Mediterranean climate. Their inclusion in the list could also attract project partners such as the Metropolitan Water District, which is encouraging native plantings to conserve water, and the Theodore Payne Foundation.

In general, we are pleased with the plan and we commend Public Works for providing the leadership in developing it. We encourage you to keep sustainability foremost in mind as the plan is revised and implemented.

Sincerely,

Andy Lipkis, Founder and President
TreePeople

TREEPEOPLE

December 10, 2003

Comment Letter No. 17B

Mr. Vik Bapna, Project Manager
Sun Valley Watershed Project
L.A. County Department of Public Works
900 S. Fremont Avenue, 11th Floor
Alhambra, CA 91803

re: Draft Sun Valley Watershed Management Plan

Dear Vik,

Congratulations on the completion of the draft! I've looked it over and have the following suggestions for your consideration as you prepare the final plan.

In the chart on page **ES-5**, Tree Planting and Mulching are listed as having a negligible impact on average annual water conservation. This is hardly the case with a plan that posits 17,000 to 35,000 trees planted and mulching practiced on 20-40% of residential properties. These wide ranges may make it difficult to quantify the impact, but I would like to see it qualified more generously, perhaps as "significant, but uncalculated." Each tree and tree well has considerable capacity to capture and infiltrate water that would otherwise run off. Mulch beds perform similarly, and they also reduce irrigation needs by retaining moisture in planted areas.

On page **3-33**, "disconnecting" downspouts is offered as an example of a simple structural BMP. The text should instead read "redirecting" downspouts. The same error appears on page **4-17**. **Table 3-12** should reflect that retention grading is also suitable for commercial parcels.

As it now reads, the first sentence in paragraph 2 on page **3-34** suggests that the system is designed to allow solids to spill into the cistern. It should read, "Runoff enters through a settling chamber where a portion of the suspended solids is removed before the water spills over into the storage tank."

It's a minor point, but just to keep things as accurate as possible, about two thirds of the capacity of the cistern pictured on page **3-34** is below ground.

The Tree Planting and Mulching components of the four plan alternatives are discussed on page **3-36**. Achieving either of the modeled participation rates would require a concerted campaign to teach community residents why these practices are beneficial and how they can implement them. A program of incentives would also be desirable and perhaps necessary.

The discussion of the benefits of tree planting on page **3-37** should include flood reduction and water supply augmentation, both resulting from the capture and infiltration of runoff. In addition, areas planted with trees will require less irrigation than those in grass.

On page **4-18**, I recommend deleting the word "actually" in Number 3, Example a.

TreePeople's Citizen Forester program is accurately and appropriately described on page **5-1**, but its Home Forester training has also been offered in Sun Valley. Home Forester teaches homeowners to improve watershed functions on their property, and it, or a similar program will be essential to the success of the onsite-BMP portion of the plan.

It should be made clear that mulching is easily practiced by property owners themselves, not restricted to those who hire trained and licensed gardeners.

Residential properties also have a role to play in fulfilling another objective cited in the stakeholders' mission statement – "increasing… wildlife habitat." Residential tree planting, particularly if it stresses native species, can add considerable habitat value to the project. A program such as the National Wildlife Federation's Backyard Wildlife Habitat, which teaches people to "garden for wildlife," can point the way here.

On page **5-8**, the projected publication date of the Final PEIR should be changed – perhaps to early 2004?

Overall, the plan looks great. We're encouraged that the project has attained this important milestone and look forward to watching, and assisting with, its implementation.

Kind regards,

Rebecca Drayse

Rebecca Drayse
T.R.E.E.S. Project Manager

Responses to Letter No. 17 **Andy Lipkis, Founder and President**
Rebecca Drayse, T.R.E.E.S. Project Manager
TreePeople

17A-1 Table 1-1 (EIR Section 1.4) and Section 3.4.14 have been revised to indicate that the benefits of the Tree Planting and Mulching component include water quality, flood control, and water conservation.

17A-2 EIR Section 1.8.1 has been revised to include water conservation as a beneficial impact of the project.

17A-3 EIR Section 3.4.13 has been revised to correct the student body size of Sun Valley Middle School.

17A-4 EIR Section 3.4.14 has been revised to incorporate the additional information regarding benefits of the Tree Planting and Mulching component.

17A-5 EIR Section 3.4.14 has been revised to indicate that a coordinated outreach and education will provide for a faster participation rate towards implementation of the Tree Planting and Mulching project component.

17A-6 Native species will be considered for the Tree Planting component, depending on the compatibility of tree characteristics with site conditions. EIR Section 3.4.14.3 has been revised to incorporate this information.

17B TreePeople's comments on the Draft Watershed Management Plan have been reviewed and incorporated into the Final Watershed Management Plan.

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H.2 COMMENTS RECEIVED DURING THE PUBLIC MEETING

The following is a summary of comments received during the Draft EIR public meeting, which was held on October 29, 2003 at the Sun Valley Middle School. These comments include both oral comments and those written on comment cards that were distributed at the meeting. The comment summaries are followed by LACDPW responses. Oral comments were made by the following individuals: Jerry Friedner, David Hernandez, Veronica Padilla, and Julie Sehad. Additional oral comments were made by those who did not identify themselves.

Comment: Will consent from property owners be coordinated prior to project implementation (commercial properties such as gravel pits)?

Response: Purchase, lease, or other acquisition of project sites will be completed prior to implementation of any specific project component.

Comment: How will unstable walls of gravel pits be reinforced?

Response: The specific methods for stabilizing the sideslopes of the gravel pits will be determined during detailed design based on recommendations in the site-specific geotechnical study (see EIR Sections 4.4.3.2 and 4.4.4), and appropriate analysis will take place during project-level CEQA review. Potential methods include soil compaction and covering the surface with stabilizing materials.

Comment: Supports project. Looking forward to the project benefits (beautification of Sun Valley and water conservation).

Response: LACDPW appreciates the community's support for the project.

Comment: Concerned regarding safety. What are the limitations of the project?

Response: Safety concerns related to the project include creation of mosquito habitat, site security, hazardous materials at project sites, and stormwater quality and impacts to potable groundwater. These issues are discussed in EIR Sections 4.5.3 (Hazards and Hazardous Materials) and 4.7.6 (Hydrology – Surface and Ground Water Quality). After incorporation of mitigation, impacts on these topics were determined to be less than significant.

Comment: Concerned regarding project impacts on park activities (baseball and swimming pool).

Response: As discussed in EIR Section 4.10, construction of Watershed Management Plan project components at existing parks may require closure of portions of parks and impact public access to facilities (e.g., baseball field and other outdoor facilities). Specific closures (locations and durations) will be determined during design of the specific components. Public notice of these closures will be provided. Please note that the swimming pool at Sun Valley Park is not likely to be affected by project construction.

Comment: Will the plan increase property tax or have economic impact on the community?

Response: Costs associated with implementation of the Watershed Management Plan are expected to be covered by a combination of County and City funds as well as state, federal, and other grant programs that support watershed enhancement projects. Costs associated with operation and maintenance of the facilities will be paid by the lead agency for the individual project component. There will be no special assessment of taxpayers within the Sun Valley Watershed to pay for this project.

Comment: Sun Valley has been experiencing flooding problems for many years (e.g., at Tujunga and Saticoy). Hope that this time the issue will be addressed.

Response: As described in EIR Section 4.6.5, depending on the specific project components that are implemented, approximately 1,300 to 1,900 acre-feet of stormwater will be managed by the proposed project. While the overall project implementation schedule is anticipated to be 10 years, local flooding improvements will be realized as soon as the first project components are constructed. Please see www.sunvalleywatershed.org or contact Watershed Management Division staff for updates on project progress.

Comment: Concerned regarding safety associated with reusing gray water.

Response: Household water such as from sinks and washing machines is commonly referred to as gray water. Reuse of water from these sources is not proposed under the Watershed Management Plan. The Plan does include reuse of stormwater collected in cisterns and retention basins. Water quality issues related to stormwater are discusses in EIR Section 4.7.6.3. Please also see the response to comment below.

Comment: Concerned about quality of water collected by cisterns (pollutants on the roof).

Response: Under the Watershed Management Plan (EIR Section 3.4.3 – Onsite Best Management Practices), rainwater collected in backyard cisterns is proposed for reuse for lawn watering and other non-potable uses. This water will come in contact with roof materials prior to collection in the cisterns. Cisterns will not be used at industrial facilities with galvanized metal roofs due to the potentially high concentrations of metals present in the roof runoff. Cisterns will also be designed to collect sediments so that the water for reuse contains fewer pollutants. The specific designs of the cisterns have not been selected at this time. When specifically proposed for implementation, a rainwater collection and cistern system designed to prevent the first flush from entering the cistern will be considered.

Regarding the potential impacts to groundwater quality from infiltration associated with other Onsite Best Management Practices (drywells), please see response to comment 11A-2.

Comment: Who will be responsible for funding the project? What is the project schedule and phasing?

Response: Agencies primarily responsible for funding the project would be LACDPW and City of Los Angeles (Department of Water and Power, Department of Recreation and Parks, and Department of Public Works). The schedule for project implementation is described in EIR Section 3.7.

Comment: Are there plans to apply stormwater best management techniques (e.g., street drainage and tree planting) to a private home?

Response: A voluntary community involvement program to install small-scale stormwater management systems at residential, commercial, and industrial properties is included in the proposed project (EIR Section 3.4.3 – "Onsite Best Management Practices").

Comment: Will the recreation area planned for CalMat Pit be flooded with water and debris during storms?

Response: The proposed retention facility at CalMat Pit will be large enough to capture large storms (up to 50-year frequency storm). Before entering the site, stormwater will flow through trash screens to remove large debris. During storms larger than 50-year frequency storms, recreational facilities may be flooded.

Comment: LADWP's incentive program solar panel installation is a good program.

Response: The commentor's support of other environmental programs is acknowledged. Please note that the Sun Valley Watershed Management Plan does not include solar panel rebates.

Comment: Is the water conservation project for Hansen Dam proposed by the County several years ago still being considered?

Response: The program study was completed with the U.S. Army Corps of Engineers. The schedule for implementation of the water conservation project has not been determined at this time.

Comment: Will there be removal of concrete from the Los Angeles River?

Response: Removal of concrete from the Los Angeles River is not proposed as part of the Sun Valley Watershed Management Plan.

Comment: There are plans to develop the gravel pit on Peoria at Glenoaks ("Trout-Switzer") as storage parking for semi-trucks. Will this site be required to comply with the project?

Response: Development of the referenced property is within the jurisdiction of the City of Los Angeles, and subject to the City's requirements. The Watershed Management Plan does not include any project components at this site.

Comment: Concerned regarding inundation of oak trees at Sun Valley Park.

Response: Infiltration facilities at the park will be constructed underground and will be designed to avoid the roots of the oak trees.

Comment: Why are the spreading grounds empty?

Response: Existing spreading grounds in the project area (e.g., Hansen and Tujunga Spreading Grounds) are operated to percolate storm runoff for groundwater recharge. They are designed to have no standing water in the basins once runoff has percolated.

Comment: Could there be more rangers at Sun Valley Park? What can be done to address the homeless.

Response: Under the Watershed Management Plan, infiltration facilities will be installed underground at Sun Valley Park. Other issues at the park, such as homelessness, are currently being addressed by the City of Los Angeles Department of Recreation and Parks in coordination with the Los Angeles Police Department.

Comment: Biological assessment for the project is incomplete.

Response: As described in EIR Section 4.2, several of the project component sites could not be accessed for biological surveys. Prior to implementation of these project components, onsite field surveys for biological resources will be conducted (see EIR section 4.2.7). Please also see responses to Comment Letter Nos. 1 and 3.