CITY OF LOS ANGELES DEPARTMENT OF WATER AND POWER

Tujunga Spreading Grounds Enhancement Project

Draft Environmental Impact Report

AUGUST 2012
SCH No. 2012021028

MWH®

BUILDING A BETTER WORLD

CEQA Draft Environmental Impact Report

Tujunga Spreading Grounds Enhancement Project

August 2012

General Manager
Ronald O. Nichols

Senior Assistant General Manager – Water System
James B. McDaniel

Manager, Watershed Management Group
Andy A. Niknafs

Director of Environmental Affairs
Mark J. Sedlacek

Manager of Environmental Planning and Assessment
Charles C. Holloway

Prepared by:

Los Angeles Department of Water and Power
111 North Hope Street, Room 1044
Los Angeles, CA 90012

Technical Assistance Provided by:

MWH Americas, Inc.
618 Michillinda Avenue, Suite 200
Arcadia, California 91007

Los Angeles Department of Water and Power

Table of Contents

Section No. **Page No.**

Section 1 Summary 1-1
1.1 Project Background and Objective 1-1
1.2 Project Location and Setting 1-1
1.3 Project Description 1-2
1.4 Environmental Impacts and Mitigation Measures 1-4
1.5 Related Projects and Cumulative Impacts 1-4
1.6 Alternatives to the Proposed Project 1-13
  1.6.1 No Project 1-13
  1.6.2 Soil Disposal Alternatives 1-13
  1.6.3 Environmentally Superior Alternative 1-14
1.7 Growth-Inducing Impacts 1-15
1.8 Significant Environmental Impacts for Which no Feasible Mitigation is Available ... 1-15
1.9 Significant Irreversible Environmental Changes 1-16
1.10 Areas of Known Controversy and Issues to be Resolved 1-17

Section 2 Introduction 2-1
2.1 Lead Agency 2-1
2.2 Responsible and Trustee Agencies 2-1
  2.2.1 Los Angeles County Flood Control District 2-1
  2.2.2 Regional Water Quality Control Board 2-2
  2.2.3 California Department of Fish and Game 2-2
2.3 Project Location 2-2
  2.3.1 Regional Setting 2-2
  2.3.2 Existing On-Site Land Uses 2-4
2.4 Project Background 2-6
  2.4.1 Groundwater Recharge 2-6
  2.4.2 Sheldon-Arleta Landfill 2-6
  2.4.3 Integrated Regional Water Management Plan 2-6
2.5 Schedule Milestones 2-7
2.6 Project Objective 2-7
2.7 CEQA Process 2-7
  2.7.1 Notice of Preparation 2-7
  2.7.2 Public Meeting 2-8
  2.7.3 Intended Uses of the EIR 2-8
2.8 Areas of Known Controversy and Issues to be Resolved 2-8
  2.8.1 Soil Disposal Location 2-8

Table of Contents

Section No. **Page No.**

Section 3 Project Description **3-1**
3.1 Project Description 3-1
    3.1.1 Existing Intake Structure 3-1
    3.1.2 New Intake Structures 3-1
    3.1.3 Basin Reconfiguration 3-3
    3.1.4 Additional Project Elements 3-3
3.2 Alternatives 3-4
    3.2.1 Alternatives Considered During Project Planning 3-4
    3.2.2 Alternatives to the Proposed Project 3-5
3.3 Construction Activities 3-8
    3.3.1 Construction Assumptions 3-8
3.4 Project Operation 3-8
    3.4.1 Maintenance 3-8
    3.4.2 Methane Gas Monitoring 3-9
3.5 Related Projects 3-9

Section 4 Impacts **4.1-1**
4.1 Air Quality 4.1-1
    4.1.1 Resource Overview 4.1-1
    4.1.2 Regulatory Framework 4.1-3
    4.1.3 Existing Conditions 4.1-9
    4.1.4 Significance Criteria 4.1-11
    4.1.5 Impacts 4.1-14
    4.1.6 Cumulative Impacts 4.1-19
    4.1.7 Mitigation Measures 4.1-21
    4.1.8 Impact Significance After Mitigation 4.1-21
    4.1.9 Project Alternatives 4.1-22

4.2 Noise 4.2-1
    4.2.1 Resource Overview 4.2-1
    4.2.2 Environmental Setting 4.2-2
    4.2.3 Significance Criteria 4.2-4
    4.2.4 Impacts 4.2-5
    4.2.5 Mitigation Measures 4.2-7
    4.2.6 Impact Significance After Mitigation 4.2-8
    4.2.7 Cumulative Impacts with Related Projects 4.2-8
    4.2.8 Project Alternatives 4.2-9

4.3 Transportation and Traffic 4.3-1
    4.3.1 Regulatory Framework 4.3-1
    4.3.2 Environmental Setting 4.3-2
    4.3.3 Significance Criteria 4.3-6
    4.3.4 Impacts 4.3-7
    4.3.5 Mitigation Measures 4.3-17

Section No. **Page No.**

4.3.6 Impact Significance After Mitigation 4.3-17
4.3.7 Cumulative Impacts with Related Projects 4.3-18
4.3.8 Project Alternatives 4.3-18

Section 5 Additional CEQA Analyses 5-1
5.1 Effects Found Not to Be Significant 5-1
5.1.1 Mitigation Measures to Further Reduce Less than Significant Effects 5-2
5.2 Potentially Significant Impacts Mitigated to Less than Significant Levels 5-3
5.2.1 Cultural Resources 5-3
5.2.2 Noise During Project Construction 5-4
5.3 Significant Environmental Impacts for Which no Feasible Mitigation is Available 5-5
5.4 Significant Irreversible Environmental Changes 5-6
5.5 Growth-Inducing Impacts 5-7
5.6 Alternatives to the Proposed Project 5-7
5.6.1 No Project 5-7
5.6.2 Soil Disposal Location Alternatives 5-8
5.6.3 Environmentally Superior Alternative 5-9

Section 6 References, Acronyms and Preparers 6-1
6.1 References and Bibliography 6-1
6.2 Acronyms and Abbreviations 6-3
6.3 Preparers of the Environmental Impact Report 6-6

LIST OF APPENDICES

A – Notice of Preparation and Initial Study for Tujunga Spreading Grounds Enhancement Project
B – NOP Comment Letters
C – Air Pollutant Emissions Calculations and Dust Mitigation Measures
D – Noise Impact Analysis
E – Traffic Impact Analysis

List of Tables

Table **Page No.**

Table 1-1 Summary of Proposed Project Impacts and Mitigation Measures 1-5
Table 1-2 Related Projects 1-13

Table 2-1 Project Milestones – Tujunga Spreading Grounds Enhancement Project 2-7
Table 2-2 Permits or Approvals Potentially Required 2-9

Table 3-1 Tujunga Spreading Grounds Proposed Basin Capacities..................................... 3-3
Table 3-2 Related Projects 3-10

Table 4.1-1 National and California Ambient Air Quality Standards.................................. 4.1-4
Table 4.1-2 Monthly Average Temperatures and Precipitation – Tujunga Meteorological Station.. 4.1-9
Table 4.1-3 Representative Air Quality Data for the Project Area (2006-2010) 4.1-10
Table 4.1-4 South Coast Air Basin Attainment Classification for Criteria Pollutants....... 4.1-11
Table 4.1-5 SCAQMD Air Quality Significance Thresholds 4.1-13
Table 4.1-6 Localized Significance Thresholds, lbs/day 4.1-14
Table 4.1-7 Estimated Equipment and Vehicles for Project Construction......................... 4.1-16
Table 4.1-8 Estimated Maximum Daily Construction Emissions...................................... 4.1-17
Table 4.1-9 Estimated Annual GCH Emissions from Construction 4.1-21
Table 4.2-1 Noise Measurements in the TSG Project Vicinity.. 4.2-4
Table 4.2-2 Typical Outdoor Construction Noise Levels 4.2-6
Table 4.3-1 Level of Service Definitions for Signalized Intersections 4.3-4
Table 4.3-2 Existing (2011) Intersection Level of Service 4.3-5
Table 4.3-3 LADOT Significance Criteria for Project Operations 4.3-6
Table 4.3-4 Traffic Analysis Results – Existing (2011) Plus Project Conditions.............. 4.3-14
Table 4.3-5 Traffic Analysis results – Cumulative Plus Project Conditions (2015).......... 4.3-15

Table 5-1 Tujunga Spreading Basins Enhancement Project Summary of Less Than Significant Impacts 5-1

List of Figures

Figure **Page No.**

Figure 1-1 Future Site Plan 1-3

Figure 2-1 Project Vicinity 2-3
Figure 2-2 Existing Site Plan 2-5

Figure 3-1 Future Site Plan 3-2
Figure 3-2 Potential Soil Disposal Locations 3-6
Figure 3-3 Related Projects 3-11

Figure 4.2-1 Noise Measurement Locations 4.2-3
Figure 4.3-1 Study Area and Analyzed Intersections 4.3-3
Figure 4.3-2 Boulevard Truck Routing Plan 4.3-9
Figure 4.3-3 Sheldon Pit Truck Routing Plan 4.3-10
Figure 4.3-4 Cal Mat Pit Truck Routing Plan 4.3-12
Figure 4.3-5 Bradley Landfill Truck Routing Plan 4.3-13

Section 1
Summary

The Tujunga Spreading Grounds (TSG) are owned by the City of Los Angeles Department of Water and Power (LADWP, Department) and have been operated by the Los Angeles County Flood Control District (Flood Control District) since 1990. LADWP is the lead agency under the California Environmental Quality Act (CEQA) for the TSG Enhancement Project (proposed project). The Flood Control District is a responsible agency for the project, and will design and supervise construction of the proposed improvements. The proposed project will increase the facility's storage and recharge capacity by altering intake facilities and by deepening and/or combining spreading basins.

In February 2012, a CEQA Initial Study was prepared by LADWP based on State CEQA Guidelines Appendix G, to determine whether construction and operation of the proposed project would result in significant effects on the environment. Since potentially significant effects were identified, LADWP determined that an Environmental Impact Report (EIR) was needed to analyze those effects. A Notice of Preparation (NOP) of the EIR, along with the Initial Study, was prepared and filed with the State Clearinghouse on February 13, 2012 (**Appendix A)**. Comments on the scope and content of the EIR were received on the NOP from three regulatory agencies (**Appendix B**).

1.1 PROJECT BACKGROUND AND OBJECTIVE

The Flood Control District operates TSG by diverting stormwater from the Tujunga Wash Channel using a rubber dam and distributing it through the facility using a canal system and flashboard structures. TSG is located adjacent to the unlined Sheldon-Arleta Landfill. In the past, when TSG recharged large amounts of water, methane gas migrated from the landfill to local residential properties. This issue caused temporary restrictions to be placed on the stormwater facility to prevent methane gas migration into nearby schools and communities during stormwater spreading operations. Two of the existing basins, covering approximately 15 acres, were taken out of service due to methane gas migration. Phase I of the Cesar Chavez Project (completed in 2010) upgraded the landfill's methane gas extraction system and mitigated this issue, allowing for full operation of the spreading facilities.

The San Fernando Groundwater Basin is the City's primary local water source, providing approximately 11 percent of the total water supply. However, the Basin is experiencing a decline in groundwater levels that threatens its long-term sustainability. Therefore, the objective of the TSG Enhancement Project is to increase stormwater recharge into the San Fernando Groundwater Basin through enhancement and operation of the TSG facility.

1.2 PROJECT LOCATION AND SETTING

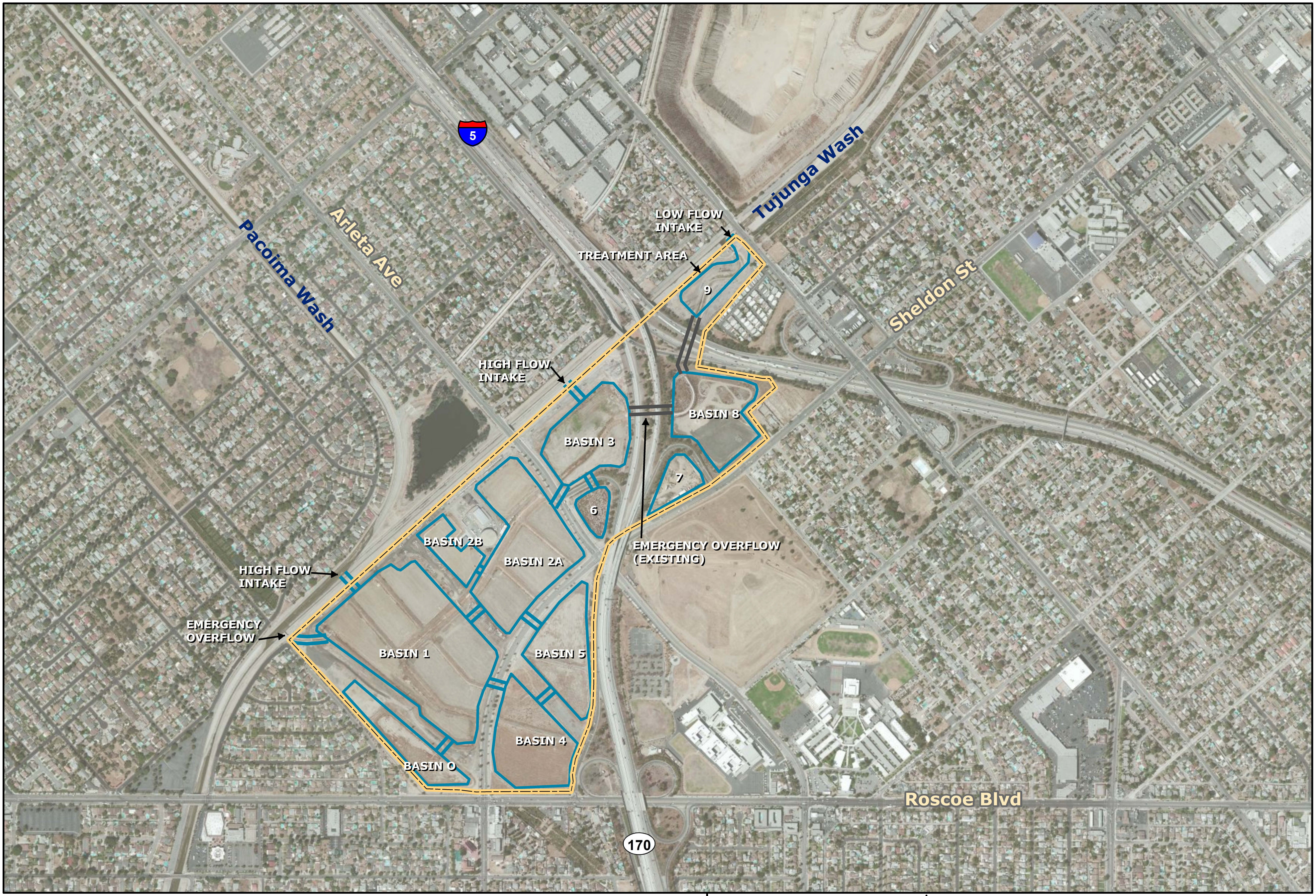
The project site is located south of the San Gabriel Mountains in an urbanized area of the City of Los Angeles. Stormwater from the largely undeveloped mountain areas flows first to Hansen Dam, where it is temporarily held, and then released to Tujunga Wash, from which it can be diverted to the project site. The TSG is located approximately 17 miles northwest of downtown Los Angeles in the northeastern portion of the San Fernando Valley.

The proposed project enhancements will be within the boundary of the existing 160-acre facility roughly bounded by Roscoe Boulevard, SR-170 freeway, Laurel Canyon Boulevard, and the Tujunga Wash. On-site facilities include 20 spreading basins, a small office building, water storage tank, water pumping station, ammoniation station, and various intake and water conveyance structures, in addition to power line rights-of-way for Southern California Edison and LADWP. Adjacent to the site along the flood control channel are the 12 wells that form the Tujunga Wellfield. Adjacent land uses to TSG are residential, commercial operations, and two schools (Richard E. Byrd Middle School and J. H. Francis Polytechnic High School).

1.3 PROJECT DESCRIPTION

The TSG will be enhanced to enable an average of 8,000 acre-feet (2.6 billion gallons) of stormwater per year to be captured and recharged. The proposed project will:

- Alter the current intake facility to capture low flows from Tujunga Wash and install a trash rack to improve water quality. Low flows will pass under I-5 using existing conveyance pipe and will be released into the reactivated basins located southeast of the freeway interchange. These basins will be improved to provide treatment prior to recharging the groundwater.
- Install two new intake facilities to capture high flows from the Tujunga and Pacoima Diversion Washes. Intake No. 1 will be located immediately southwest of the freeway interchange and will divert 250 cubic feet per second (cfs) into the upper portion of the TSG. Intake No. 2 will be located immediately downstream of the confluence of the Tujunga Wash and Pacoima Wash Channels and will divert a maximum of 200 cfs into the lower portion of the TSG. Two inflatable rubber dams (60-foot-wide and 104-foot-wide) will be used to direct Tujunga Wash and Pacoima Wash flows to the spreading basins.
- Install devices to prevent widespread distribution of trash within the TSG.
- Reactivate, deepen and/or combine basins to increase the facility’s storage and recharge capacity (**Figure 1-1**). The existing TSG Basins A through N and Q through T will be graded to accept water from either intake system. The existing overflow from Basin B will continue to act as an overflow to Tujunga Wash. Basins O and P, which are the dormant, uppermost basins, located between I-5 and SR-170, will be reactivated, deepened, and able to accept low flows throughout the dry season, and may be able to accept flows during the wet season, depending on operational limitations and available



Key to Features

- Proposed Spreading Basins
- Proposed (New or Modified) Conveyance
- Project Site
- Existing Conveyance

N

0 550 1,100 Feet

Document: TujungaSpreadingBasins.mxd

Date: June 21, 2012

Future Site Plan
Tujunga Spreading Grounds

MWH®

Figure 1-1

flows. All basins west of SR-170 (Basins A through N and Q through T) will be deepened, and some combined, increasing storage and recharge capacity.

- Replace existing canal and flashboard structures (which connect and allow water to flow between basins) with modernized inter-basin weir structures and by-pass gates. All new diversion facilities will be automated; operation will be managed remotely from LADWP's on-site facility.
- Fence the TSG facility. Adjacent to freeways, private property, and the Tujunga Wash Channel, chain link fence will be installed. The fence fronting the public right-of-way at Basins 3, 6, 7, 8, and 9 will be 8-ft tall tubular steel fence. The fence fronting the public right-of-way at Basins O, 1, 2, 4, and 5 will be split rail fence.

Additionally, depending on the availability of space on site, compatibility with the project, and funding opportunities, recreational enhancements may be added to the facility. Potential compatible uses for the property are walking trails, outdoor classrooms and associated educational activities, and native habitat enhancement.

1.4 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Based on the analyses presented in the Initial Study (**Appendix A**), and in **Section 4** of this EIR, **Table 1-1** summarizes the impacts of the proposed project and the mitigation measures identified to reduce potentially significant effects.

1.5 RELATED PROJECTS AND CUMULATIVE IMPACTS

Related projects are projects that may have impacts that are cumulative with the proposed project. Seven potential construction projects have been identified for the project area and may be constructed in a similar time frame (2012 to 2015) as the proposed project. The related projects include housing, schools, and a commercial development (**Table 1-2**) and are all located within 1.5 miles of the TSG.

The traffic analysis considered traffic potentially generated by the related projects; impacts were found to be less than significant. One or more of the related projects may be constructed at the same time as the proposed project. Therefore, air pollutant emissions would have a cumulatively considerable, but temporary, impact on ambient air quality during construction activities. Six of the related projects are too distant to have cumulative impacts on noise. The housing project proposed for 12501 Sheldon Street would be immediately adjacent to the TSG. As mitigated, impacts on noise would be temporary, and less than cumulatively considerable.

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

Environmental Topic	Impact Discussion	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Aesthetics	• No significant visual resources will be disturbed or obstructed. • Lighting, if any, will be shielded away from adjacent residences.	Less than Significant	No mitigation required.	Less than Significant
Agriculture and Forest Resources	• No agricultural or forest lands will be disturbed.	No Impact	No mitigation required.	No Impact
Air Quality - Construction	• Construction equipment and soil hauling trucks will temporarily emit air pollutants in excess of established regional standards for ROG, CO, NO_x, and $PM_{2.5}$. Maximum daily emissions would also be above local significance thresholds for NO_x, PM_{10}, and $PM_{2.5}$.	Significant	**AIR-1 Equipment Maintenance –** All equipment shall be properly tuned and maintained in accordance with manufacturer's specifications. **AIR-2 Equipment Efficiency –** As feasible, construction equipment will be selected that has low pollutant emissions and high energy efficiency. Factors to consider include model year, alternative fuels (e.g., compressed natural gas, biodiesel, emulsified diesel, methanol, propane, butane, and low sulfur diesel) and lean NOx catalyst. **AIR-3 Equipment Operation –** The contractor shall maintain and operate construction equipment to minimize exhaust emissions. During construction, trucks and vehicles will minimize idling when not in use to the extent feasible. **AIR-4 Generator Use –** To the extent possible, power will be obtained from power poles (the electrical grid) rather than the use of large generators on site.	Significant with implementation of feasible mitigation

Environmental Topic	Impact Discussion	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
			AIR-5 Catalytic Converters – Catalytic converters shall be installed on all heavy construction equipment, where feasible.	
Air Quality - Operation	• Project operation will result in air pollutant emissions related to equipment used for periodic maintenance activities, similar to existing conditions.	Less than Significant	No mitigation required.	Less than Significant
Biological Resources	• Special status species do not occur on site and no habitat for special status species will be disturbed. • Minor areas with limited patches of native vegetation will be temporarily disturbed during construction.	Less than Significant	No mitigation required.	Less than Significant
Cultural Resources	• No historic, archeological, or paleontological resources are known for the project site. • Limited potential for disturbance of unknown cultural resources during basin excavation.	Significant	**CR-1 Cultural Resources Awareness Training –** Construction personnel and staff shall be given training by a qualified archaeologist on the identification of possible archaeological and paleontological resources that may be present in the area. In the event potential archaeological or paleontological resources are encountered during excavation, work in the vicinity of the discovery shall halt until appropriate treatment of the resource is determined by a qualified archaeologist/ paleontologist in accordance with the provisions of CEQA Section 15064.5.	Less than Significant

Environmental Topic	Impact Discussion	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
			CR-2 Reporting for Discovery of Human Remains – If human remains are encountered during project activities, work within 25 feet of the discovery shall be redirected and the County Coroner notified immediately. At the same time, an archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. Project personnel shall not collect or move any human remains and associated materials. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.	
Geology and Soils	• The site is located in a seismically active area but is not in an area considered susceptible to liquefaction landslides, or expansive soils. • No habitable or other above ground structures are proposed. • Soil erosion during construction will be controlled with standard best management practices.	Less than Significant	No mitigation required.	Less than Significant
Greenhouse Gas Emissions	• Construction equipment and soil hauling trucks will emit greenhouse gases including	Less than Significant	No mitigation required, however, mitigation measures to reduce air emissions will also reduce greenhouse gases from project construction.	Less than Significant

Environmental Topic	Impact Discussion	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
	CO_2, CH_4, and N_2O. Amortized construction emissions will not exceed established thresholds. • No substantial increase in greenhouse gas emissions for project operation.			
Hazards and Hazardous Materials	• Hazardous materials use limited to fuels, oils and lubricants for construction equipment and vehicles. • Project site is not a known hazardous materials site.	Less than Significant	No mitigation required. [Emergency service providers notification included under Traffic mitigation, below.]	Less than Significant
Hydrology and Water Quality	• Project will increase diversion of storm water and groundwater recharge to the San Fernando Groundwater Basin. • Treatment of Tujunga Wash low flows will improve water quality. • Stormwater quality during construction will be controlled with standard best management practices.	Beneficial for groundwater volume, water quality and flooding Less than Significant for stormwater quality impacts during construction	No mitigation required.	Beneficial impact for groundwater volume, water quality and flooding Less than Significant for stormwater quality impacts during construction
Land Use and Planning	• Site will continue to operate as a stormwater recharge facility. No habitable structures are proposed.	No Impact	No mitigation required.	No Impact

Environmental Topic	Impact Discussion	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Mineral Resources	• No known mineral resources are present on the project site.	No Impact	No mitigation required.	No Impact
Noise	• Project construction equipment will (temporarily) substantially increase noise on adjacent residential properties above ambient conditions. • Project operation will result in noise generation from periodic maintenance activities, similar to existing conditions.	Significant for Project Construction Less than Significant for Project Operation	**N-1 Construction Hours** - Construction shall be limited to: • Weekdays: 7:00 AM to 9:00 PM • Saturdays: 8:00 AM to 6:00 PM • No construction shall occur on Sundays or national holidays. **N-2 Mufflers** - Construction equipment, fixed and mobile, shall be equipped with properly operating and maintained noise mufflers and intake silencers, consistent with manufacturers' standards. Each piece of equipment will be individually inspected to ensure proper operation of the muffler and silencer equipment. **N-3 Noise Control Plan** - A Noise Control Plan shall be prepared prior to the start of construction, and implemented during the entire construction period. The Plan shall: • Predict noise levels during construction activity based on the specific construction equipment to be used at the site. If equipment noise levels are not available, these shall be measured in the field. • Identify areas of the construction site where noise control is required to meet noise ordinance standards. For these areas, identify the additional measures, which may include: specialized mufflers or silencers, directional exhaust pipes, damping and sound absorptive material, and/or acoustical barriers. Where relevant, the size, number and location of portable	Less than Significant for Project Construction and Operation

Environmental Topic	Impact Discussion	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
			acoustical barriers and/or noise control curtains to be used during construction will be detailed. The height and length of the barriers shall be determined based on the location of the construction activity, specific construction equipment to be used (type and number) and distance to the receptors. • Predict noise levels during construction activity with use of specialized mufflers or silencers, directional exhaust pipes, damping and sound absorptive material, and/or acoustical barriers, as relevant. • Document the reduction in construction noise via monitoring. Noise monitoring shall be conducted a minimum of 1 day per week when construction is within 400 feet of a residence.	
Population and Housing	• No habitable structures or expansion of the potable water system are proposed.	No Impact	No mitigation required.	No Impact
Public Services	• Project does not include habitable structures or other elements that would substantially increase the need for public services.	Less than Significant	No mitigation required.	Less than Significant
Recreation	• Project will not affect population; therefore it will not increase the need for recreational facilities. • Project may include construction of trails or other	No impact on existing recreational facilities Potential beneficial impact of additional recreational amenities	No mitigation required.	Less than Significant

Environmental Topic	Impact Discussion	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
	amenities as enhancements to the site.			
Transportation and Traffic	• Construction workers commuting to the site and haul trucks for soil disposal will temporarily increase traffic on area roadways. No intersections will experience a level of service (LOS) worse than D. • Project operation will result in traffic generation from periodic maintenance, similar to existing conditions.	Less than Significant	Mitigation included to further reduce less than significant effects: **TR-1 Construction Traffic Management Plan** – A construction traffic management plan shall be prepared and submitted to LADOT for review and approval prior to the start of construction activity. This plan may designate haul routes for construction-related trucks, the location of access to the construction site, and temporary traffic control devices or flagmen, as relevant. Where construction activities would occur within a public street right-of-way around the project site, the following mitigation measures shall also be implemented: **TR-2 Traffic Control Plan** – A site-specific construction traffic control plan shall be prepared and submitted to LADOT for review and approval prior to the start of any construction work. This plan may include the location of lane closures (if any), restricted hours during which lane closures (if any) would not be allowed, local traffic detours (if any), protective devices and traffic controls (such as barricades, cones, flagmen, lights, warning beacons, temporary traffic signals, warning signs) (as relevant), access limitations for abutting properties (if any), and provisions to maintain emergency access through construction work areas (as relevant). **TR-3 Signage** – Signage shall be provided indicating alternative pedestrian and bicycle access routes, if	Less than Significant

Environmental Topic	Impact Discussion	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
			necessary where existing facilities would be affected. This would include the sidewalks and pedestrian pathways around the perimeter of the project site. **TR-4 Advanced Notice** – Advance notice shall be provided of planned construction activities to residents, businesses and property owners immediately adjacent to the construction site. **TR-5 Emergency Access Coordination** – Coordination shall be conducted with emergency service providers (police, fire, ambulance and paramedic services) to provide advance notice of ongoing construction activity and construction hours.	
Utilities and Service Systems	• No new utility systems will be required, except for the proposed stormwater capture and recharge facilities. • Project will generate approximately 1.3 million cubic yards of soil requiring off-site disposal. Material proposed to be re-used at an adjacent aggregate mining facility.	No impact on wastewater, water, and solid waste regulations. Less than Significant on landfills.	No mitigation required.	Less than Significant

Table 1-2
Related Projects

Project Number	Location	Type of Development	Size of Development
1	12501 Sheldon Street	Multi-Family Residential	63 dwelling units
2	8401 Arleta Avenue	Middle School	1,053 students
3	9171 Telfair Avenue	High School	1,620 students
4	13000 Montague Street	Elementary School	400 students
5	9582 Haddon Avenue	Condominiums	125 dwelling units
6	8755 Woodman Avenue	Middle School	480 students
7	7934 Lankershim Boulevard	Shopping Center	60,000 square feet

Source: City of Los Angeles, 2011.

1.6 ALTERNATIVES TO THE PROPOSED PROJECT

1.6.1 No Project

Under No Project, the spreading grounds would not be improved and there would be no disposal requirement for approximately 1.3 million cubic yards of soil. Additional stormwater could be diverted from the Tujunga Wash under No Project, since the methane gas migration concern at the adjacent Arleta Landfill has been resolved. However, high flows from the Pacoima and Tujunga Washes could not be diverted to the spreading basins. Since the trash racks and low flow treatment area would not be constructed under No Project, water quality would not be improved. Without the project, fine soils that reduce percolation would not be removed from the bottom of the basins and additional conveyance features would not be installed to transport stormwater among basins. The maximum volume of stormwater that could be recharged to the groundwater table under No Project is limited by the existing intake (250 cfs maximum) and the existing percolation rate (140 cfs), substantially less than the volume anticipated under the project.

Under No Project, temporary construction-related air pollutants would not be emitted, noise impacts on adjacent residences would not occur, and traffic for project soil disposal would not be added to streets in the project vicinity. However, No Project does not meet the project objective of increasing stormwater recharge into the San Fernando Groundwater Basin through enhancement and operation of the TSG facility.

1.6.2 Soil Disposal Alternatives

Alternatives to the proposed project focused on the off-site portion of the project with the greatest potential environmental impacts – disposal of approximately 1.3 million cubic yards of excess soil. Alternative soil disposal locations are:

- Alternative 1 – Boulevard Pit Disposal Site
- Alternative 2 – Sheldon Pit Disposal Site
- Alternative 3 – Cal Mat Disposal Site
- Alternative 4 – Bradley Landfill and Recycling Center Disposal Site
- Alternative 5 – Combination of Soil Disposal Alternative Locations

LADWP has been in communication with Vulcan Materials Company regarding use of TSG soils at Boulevard Pit. This location is closest to the TSG and the excess soils may be able to be used for a construction project at the Boulevard Pit. Therefore, it is the preferred alternative. Environmental impacts of the various disposal locations are:

Air Quality - All of the disposal sites are near the project. The Boulevard Pit disposal site is closest to the TSG, directly northeast of the site. This alternative would require the least amount of truck travel. Alternatives 2, 3 and 4 are along Sheldon Street northeast of the project site. Travel to these alternative sites would require the longest truck travel distance. Air pollutant emissions would be slightly higher for Alternatives 2, 3, and 4 than for Alternative 1, which involves the shortest travel distance. Under any of the alternatives, including using more than one of the disposal options, air pollutant emissions would be temporarily significant as mitigated.

Noise – Significant noise impacts from project construction would occur during normal working hours at residential receptors adjacent to the TSG. The soil disposal location selected would not impact the noise levels from the on-site construction equipment. Mobile noise generated during soil hauling activities will be less than significant under all alternatives. However, Alternative 1, Boulevard Pit, would require the least amount of truck travel and therefore it would generate the least amount of mobile noise.

Traffic - All four soil disposal location alternatives would have similar impacts on existing traffic and future (2015) traffic conditions. Under scenario 1 (trucks using driveway off Sheldon Street), Alternative 1 (Boulevard Pit) would not only adversely impact Sheldon Street and Roscoe Boulevard (as would the other three alternatives) but it would also impact the intersection of Arleta Avenue and Sheldon Street. However, none of the predicted impacts (existing or future conditions) to intersections in the project vicinity under any of the alternatives would result in LOS E or F (normally unacceptable) and all impacts would be temporary, limited to project construction.

1.6.3 Environmentally Superior Alternative

As compared with No Project, the proposed project with any of the identified soil disposal options is considered the environmentally superior alternative. No Project would not result in noise impacts on adjacent residences during construction, add traffic to area streets, or result in significant air pollutant emissions. However, all of the adverse impacts identified for the project are temporary and will be mitigated as feasible. No Project would not allow the capture of additional stormwater from the Tujunga and Pacoima Washes, would not recharge additional water to the San Fernando Groundwater Basin, and would not increase local water supplies.

Under No Project, environmental impacts (e.g., energy use, and related air pollutant emissions) could result from well pumping, and transport and treatment of additional imported water supplies. In the context of existing water shortages in the Los Angeles area, the long-term benefit of operation of the proposed project outweighs the short-term adverse impacts related to project construction. Therefore, the proposed project is the environmentally superior alternative.

The Boulevard Pit soil disposal location is closest to the TSG and therefore will require the least truck travel during project construction. While this will decrease air pollutants emitted, this alternative has a slightly greater impact on traffic at one intersection (Arleta Avenue and Sheldon Street). All of the soil disposal alternatives would have the same level of impact on noise on residences adjacent to the project site. The Boulevard Pit alternative would have slightly less mobile noise impacts. Overall, since the differences in the impacts associated with the alternative soil disposal locations are minimal, all of the alternatives are considered comparable in their level of environmental impact. Therefore, the proposed project with any of the soil disposal alternatives (or a combination of locations) is the environmentally superior alternative.

1.7 GROWTH-INDUCING IMPACTS

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. The project will facilitate the capture of additional stormwater for recharge of the San Fernando Basin, which will increase available water supplies in the region. However, no new groundwater extraction systems, potable water treatment or water distribution systems will be constructed as part of this project. Therefore, the project will not be directly or indirectly growth-inducing related to expansion of infrastructure systems.

Construction of the project will require up to 40 workers for an estimated 2.6 years. It is anticipated that workers would frequent businesses in the project area during this period. Due to the limited number of workers required and the temporary nature of construction, the impact on economic growth is less than significant. Operation of the project will not require additional workers over existing operations and maintenance staff. Therefore, the project will have a less than significant impact on population and economic growth.

1.8 SIGNIFICANT ENVIRONMENTAL IMPACTS FOR WHICH NO FEASIBLE MITIGATION IS AVAILABLE

Implementation of dust control measures in compliance with SCAQMD Rule 403 will substantially reduce particulate matter emissions during project construction. As mitigated, particulate emissions are predicted to be below regional significant thresholds but potentially (depending on the actual reduction efficiencies achieved for the project) above local significant thresholds. Since a wide-range of dust control measures will be incorporated into the project, additional feasible mitigation measures to further reduce particulate matter have not been identified. [Appendix C includes dust BACM Tables 1, 2, and 3 of Rule 403.]

Implementation of mitigation measures AIR-1 through AIR-5 would reduce air pollutant emissions during project construction. However, emissions reductions that can be achieved with these measures are not quantifiable and are not anticipated to reduce emissions of ROG, CO, and NOx below levels of significance. Use of heavy construction equipment and vehicles is required in order to implement the project. Emissions may be brought below thresholds by extending construction schedules, but this results in greater emissions overall and delays projects unnecessarily. Additional mitigation that could reduce emissions (although not necessarily below levels of significance) would be to mandate specific equipment and vehicles (based on air pollutant emission levels) to be used during construction. For example, restricting the contractor from using older equipment by mandating that, from the start of construction, all off-road diesel-powered construction equipment greater than 50 hp meet USEPA Tier 3 off-road emission standards, and that post January 1, 2015, all off-road diesel-powered construction equipment greater than 50 hp meet USEPA Tier 4 emission standards, was considered. Similarly, mandating the use of alternative fuel vehicles for soil hauling trucks was considered.

However, in order to maintain an open construction contract bidding process, specification of equipment types is considered infeasible. To ensure that contracts can be bid by a range of contractors (large and small), the County does not specify the number or types of vehicles and/or equipment to be used for construction projects. Therefore, there are no feasible mitigation measures that would reduce air quality impacts to below a level of significance. Maximum daily emissions associated with construction for the TSG Enhancement project would remain significant with implementation of feasible mitigation measures. However, construction emissions would not have a long-term air quality impact because these emissions would cease at the completion of construction. Overall, since construction air pollutant emissions as mitigated are anticipated to exceed SCAQMD thresholds, construction air emissions are a significant environmental effect that cannot be avoided if the proposed project is implemented. The long-term benefits of the proposed project to local water supply will outweigh the temporary adverse impact on air quality.

1.9 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Adverse environmental effects of the project related to construction – noise, traffic and air pollutant emissions – will all cease once project construction is complete and will not result in irreversible environmental changes. However, construction of the project will require the use of heavy equipment, workers’ vehicles, and soil disposal haul trucks. The equipment and vehicles will consume nonrenewable fossil fuels for the length of construction, estimated at approximately 2.6 years. Since the objective of the project is to increase stormwater recharge into the San Fernando Groundwater Basin, thus increasing local water supplies, the fuel use may be offset by corresponding reductions in energy use associated with well pumping, and transport and treatment of imported water supplies. The benefit of the project therefore justifies the use of irreplaceable resources (fossil fuels).

Operation of the project will require similar operations and maintenance activities as under existing conditions; there may be some minor increase in equipment use related to maintenance of landscaped areas, if implemented. However, no new workers will be required for facility operation, and overall, there will be no substantial additional consumption of nonrenewable resources for project operation. There are no significant adverse environmental changes associated with project operation.

1.10 AREAS OF KNOWN CONTROVERSY AND ISSUES TO BE RESOLVED

There are no known areas of controversy related to the proposed project. A remaining issue to be resolved is the disposal location for excavated soils resulting from project construction. As of July 2012, LADWP is coordinating with the Vulcan Materials Company in order to confirm disposal of project soils at Boulevard Pit. However, if timing of the project or other issues prevents disposal of excavation soils at this location, or disposal of the entire volume of excavated soils at this location, disposal may occur at one or more other locations. Although the precise location of the soil disposal site is unknown, impacts analysis conducted for the EIR considers the potential alternatives.

Section 2
Introduction

The Tujunga Spreading Grounds (TSG) are owned by the City of Los Angeles Department of Water and Power (LADWP, Department) and have been operated by the Los Angeles County Flood Control District (Flood Control District) since 1990. LADWP is planning to implement the Tujunga Spreading Grounds Enhancement Project (proposed project) as designed by the Flood Control District. The proposed enhancement project for TSG will increase the facility's storage and recharge capacity by altering intake facilities and by deepening and/or combining spreading basins.

This Environmental Impact Report (EIR) is the California Environmental Quality Act (CEQA) compliance document for the TSG Enhancement project. The EIR has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq., and the State CEQA Guidelines, Title 14 California Code of Regulations (CCR) Section 15000 et seq.

2.1 LEAD AGENCY

LADWP will act as lead agency for the EIR, pursuant to State CEQA Guidelines Section 15367 (California Code of Regulations, 2010). LADWP is the largest municipal utility in the nation. Established more than 100 years ago, the Department's mission is to deliver reliable, safe water and electricity supplies to approximately 3.8 million residents and businesses in Los Angeles. A five-member Board of Water and Power Commissioners establishes policy for LADWP. The Board members are appointed by the Mayor and confirmed by the City Council for 5-year terms. The Board is the decision-making body for the consideration and adoption of the proposed project, EIR, Mitigation Monitoring and Reporting Program (MMRP), and Findings of Fact.

2.2 RESPONSIBLE AND TRUSTEE AGENCIES

CEQA defines a "responsible agency" as a public agency, other than the lead agency, which has responsibility for carrying out or approving a project. A responsible agency typically has permitting authority or discretionary approval over some aspect of the overall project for which the lead agency is conducting CEQA review. The responsible agency relies on the lead agency's environmental document in acting on whatever aspects of the project require its approval. The responsible agency must issue its own findings regarding the feasibility of relevant mitigation measures or project alternatives that can substantially lessen or avoid significant environmental effects.

2.2.1 Los Angeles County Flood Control District

The Los Angeles County Flood Control District has operated the TSG since 1990. The Flood Control District, established by the State Legislature in 1915 under the Los Angeles County Flood Control Act, encompasses 2,752 square miles within the County of Los Angeles. It includes the vast majority of drainage infrastructure within incorporated and unincorporated areas in every watershed, including over 500 miles of open channel, 2,800 miles of underground storm drain, and an estimated 120,000 catch basins. The Flood Control District provides for the control and conservation of the flood, storm and other waste waters of the Flood Control District, and to conserve such for beneficial and useful purposes by spreading, storing, retaining, or causing to percolate into the soil within said district, or to save or conserve in any manner, all or any such water. The District's powers are exercised through the County of Los Angeles Board of Supervisors acting as the District's governing body.

2.2.2 Regional Water Quality Control Board

As a permitting agency under the Clean Water Act and state Porter-Cologne Water Quality Control Act, the California Regional Water Quality Control Board, Los Angeles Region (Regional Board), is also a responsible agency for the TSG Enhancement project. Installation of the proposed intake structures in the Tujunga and Pacoima Washes may require a permit from the Regional Board under Section 401 of the Federal Clean Water Act.

2.2.3 California Department of Fish and Game

A "trustee agency" is a public agency having jurisdiction by law over natural resources affected by a project which are held in trust for the people of the State of California. The California Department of Fish and Game (CDFG) is a Trustee agency, responsible for conserving, protecting, and managing California's fish, wildlife, and native plant resources. To meet this responsibility, the Fish and Game Code (Section 1602) requires an entity to notify CDFG of any proposed activity that may substantially modify a river, stream, or lake. Installation of the proposed intake structures in the Tujunga and Pacoima Washes may require a permit from the CDFG under Fish and Game Code Section 1602.

2.3 PROJECT LOCATION

The TSG facility is located at latitude 34° 13' 39" N and longitude -118° 24' 54" W, adjacent to the Sheldon-Arleta Landfill in the City of Los Angeles, Los Angeles County (**Figure 2-1**). The TSG is located approximately 17 miles northwest of downtown Los Angeles in the northeastern portion of the San Fernando Valley at the intersection of Roscoe Boulevard and Sheldon Street.

2.3.1 Regional Setting

The project site is located south of the San Gabriel Mountains in an urbanized area of the City of Los Angeles (**Figure 2-1**). Stormwater from the largely undeveloped mountain areas flows first to Hansen Dam, where it is temporarily held, and then released to Tujunga Wash, from which it can be diverted to the project site.

The project is located within the San Fernando Valley Groundwater Basin. The Basin, which provides a significant portion of Los Angeles' drinking water, is an unconfined alluvial aquifer. As a result, groundwater quality has been impacted by various industrial activities. Pollutants of concern are Trichloroethylene (TCE), Tetrachloroethylene (PCE), and Nitrate (NO_3). [The extent of contamination as of 2006 is shown on **Figure 4** of **Appendix A**]. This contaminant plume is part of the San Fernando Valley Superfund Site, Zone 1 (North Hollywood Area), containing the North Hollywood Operable Unit (NHOU) and the Burbank Operable Unit (BOU). The contamination is managed through a monthly and quarterly monitoring program designed to

N

0 2.5 5 Miles

Document: TujungaLocation2.mxd

Date: March 26, 2012

Tujunga Spreading Grounds Enhancement Project Vicinity

Figure 2-1

Source: USGS, CaSil

assess extent and movement of the contamination plume. Groundwater is extracted from both operable units for treatment to remove contaminants and then the water is reintroduced into the aquifer. As of 2008, the existing North Hollywood groundwater pump and treat system has extracted and treated approximately 8 billion gallons of volatile organic compound (VOC)-contaminated groundwater to levels that are below state and federal maximum contaminant levels (MCLs) for drinking water. Similarly, as of 2008, the Burbank groundwater pump and treat system has extracted and treated approximately 36 billion gallons of VOC-contaminated groundwater to levels that are below state and federal MCLs for drinking water (EPA, 2008).

Freeways that provide access to the area are Interstate 5 (I-5, Golden State Freeway), State Highway 170 (SR-170, Hollywood Freeway), and Interstate 210 (I-210, Foothill Freeway). Major access roads from the freeways to the project site are Roscoe Boulevard, Arleta Avenue and Sheldon Street. The Burbank-Glendale-Pasadena Airport is approximately 2.5 miles to the southeast and Whiteman Airpark is located over 2 miles northwest of the project area.

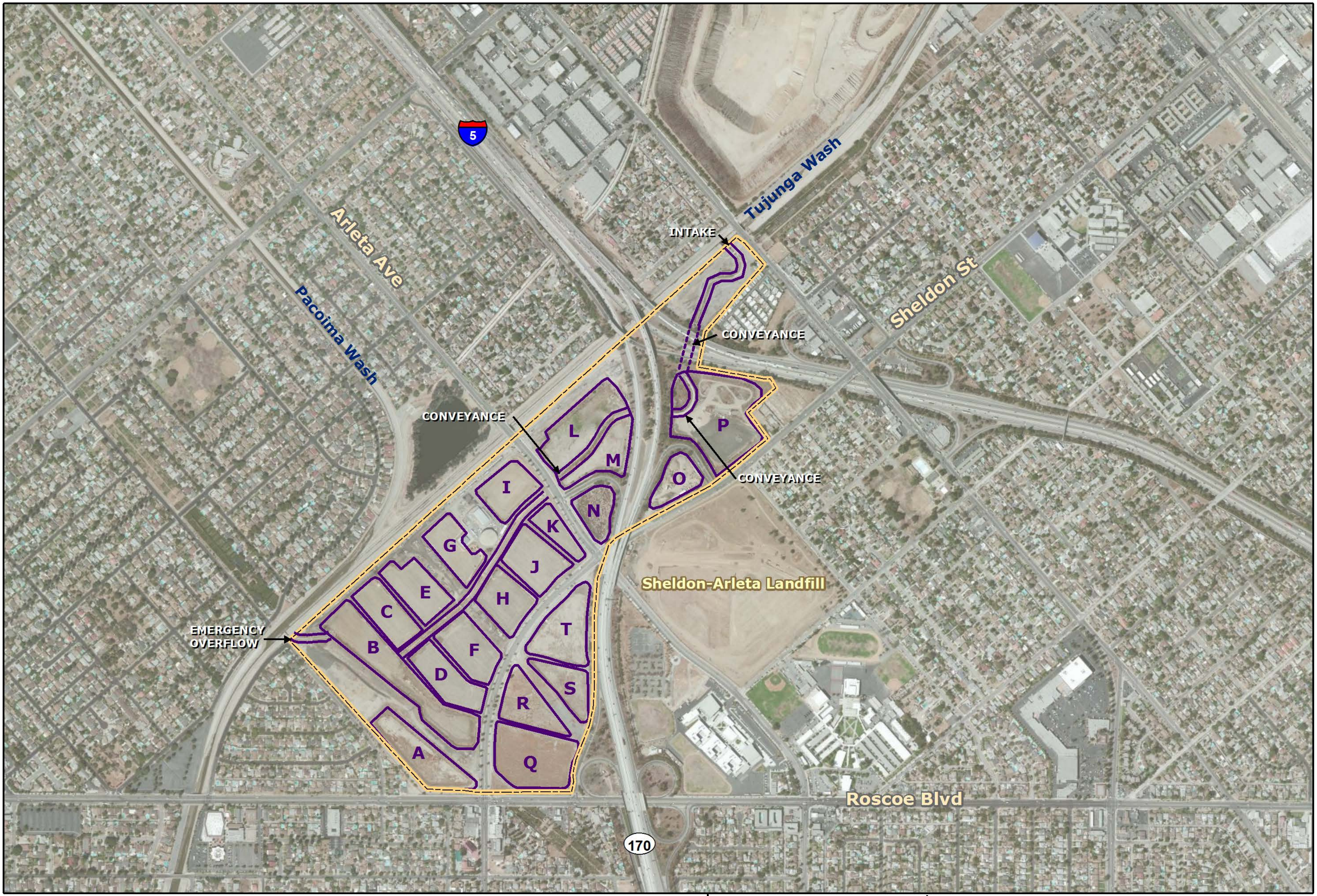
Immediately adjacent land uses to TSG are low density residential development, small commercial operations such as restaurants, and two schools (Richard E. Byrd Middle School and J. H. Francis Polytechnic High School located less than 0.2 miles east of the TSG).

Industrial uses in the project vicinity include actively mined as well as exhausted gravel pits, active landfills for inert construction debris, a power generating facility (Valley Steam Plant operated by LADWP), the Bradley Landfill and Recycling Center (Sun Valley Recycling Park operated by Waste Management, Inc.), the Vulcan Materials Company 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 (owned and operated by Los Angeles County Flood Control District) are located immediately northwest of the Valley Steam Plant. The Hansen Dam Golf Course, owned by the City of Los Angeles, is located south of Hansen Dam.

2.3.2 Existing On-Site Land Uses

The proposed project enhancements will be within the boundary of the existing 160-acre facility, roughly bounded by Roscoe Boulevard, SR-170 freeway, Laurel Canyon Boulevard, and the Tujunga Wash (**Figure 2-2**). There are several gated access points to the site. On-site facilities include 20 spreading basins (Basins A through T), a small office building, water storage tank, water pumping station, ammoniation station, and various intake and water conveyance structures, in addition to power line rights-of-ways for Southern California Edison and LADWP. Access within the site is via unpaved roads or the tops of existing berms.

Adjacent to the site along the flood control channel are the 12 wells that form the Tujunga Wellfield. These wells were initially installed to increase production from the San Fernando groundwater basin, but were later taken off-line due to water quality issues. LADWP has recently installed interim treatment (carbon filtration) for select wells in the Tujunga Wellfield in order to maintain groundwater production. The proposed project does not include any alteration to the facilities associated with the Tujunga Wellfield.



Document: TujungaConveyance.mxd

Date: March 26, 2012

Existing Site Plan
Tujunga Spreading Basins

MWH®

Figure 2-2

2.4 PROJECT BACKGROUND

2.4.1 Groundwater Recharge

The Flood Control District operates TSG by diverting stormwater from the Tujunga Wash Channel using a rubber dam and distributing it through the facility using a canal system and flashboard structures. Two of the existing basins, covering approximately 15 acres, are presently not in use. The maximum intake of stormwater at TSG is 250 cubic feet per second (cfs) and the approximate percolation rate is 140 cfs. The total storage volume within the facility is approximately 100 acre-feet.

The San Fernando Groundwater Basin is the City's primary local water source, providing approximately 11 percent of the total water supply. However, the Basin is experiencing a decline in groundwater levels that threatens its long-term sustainability. The City of Los Angeles Water Supply Action Plan (LADWP, 2008) lists the TSG Enhancement project as one of the near-term projects planned for enhancing stormwater capture.

2.4.2 Sheldon-Arleta Landfill

The Sheldon-Arleta Landfill is a City-owned closed landfill, located at 12455 Wicks Street in Sun Valley. The 41-acre site is bounded on the north by a residential area, on the south by the newly completed Richard E. Byrd Middle School, on the east by LAUSD's John H. Francis Polytechnic High School, and on the west by the TSG. In the past, when TSG recharged large amounts of water, methane gas migrated from the landfill to local residential properties. This issue caused temporary restrictions to be placed on the stormwater facility by the City of Los Angeles Bureau of Sanitation (LABOS). Those restrictions limited the maximum intake flowrate to 50 cfs and removed three basins from service. Those restrictions were intended to prevent methane gas migration into nearby schools and communities during stormwater spreading operations.

Phase I of the Cesar Chavez Recreation Complex Project (completed in 2010) upgraded the landfill's methane gas extraction system and mitigated this issue, allowing for full operation of the spreading facilities. The project also includes soccer fields, baseball fields, basketball courts, picnic areas, a children's play area, a walking/jogging path, and a parking lot. Once completed, the Cesar Chavez Recreation Complex will meet the standard for a Community Park, as defined in the City's Public Recreation Plan.

2.4.3 Integrated Regional Water Management Plan

Managed by the Flood Control District, the purpose of the Greater Los Angeles County Integrated Regional Water Management Plan (IRWMP) is to improve water supplies, enhance water supply reliability, improve surface water quality, preserve flood protection, conserve habitat, and expand recreational access in the Region. The IRWMP is also intended to define a comprehensive vision for the Region which will generate local funding, position the Region for future state bonds, and create opportunities for federal funding. Enhancement of the TSG is listed in the IRWMP as a project for the Upper Los Angeles River Subregion (Leadership Committee, 2006).

2.5 SCHEDULE MILESTONES

LADWP has developed the following schedule for the TSG Enhancement project (**Table 2-1**). The schedule is approximate and actual construction and operations start dates will depend on acquisition of necessary permits and approvals.

Table 2-1
Project Milestones - Tujunga Spreading Grounds Enhancement Project

Milestone	Anticipated Completion Date
Design Completion	2011
LADWP Board approval of CEQA document	Fall 2012
Permitting	March 2013
Award construction contract	September 2013
Notice to Proceed for Construction	October 2013
Construction Completion	2015

2.6 PROJECT OBJECTIVE

The objective of the TSG Enhancement Project is to increase stormwater recharge into the San Fernando Groundwater Basin through enhancement and operation of the TSG facility. Due to increasing need for local water supplies in the Los Angeles area and subsequent demand on groundwater supplies, enhancement of the TSG facility will enable capture of a larger volume of stormwater than is currently possible.

2.7 CEQA PROCESS

2.7.1 Notice of Preparation

In February 2012, a CEQA Initial Study was prepared by LADWP based on State CEQA Guidelines Appendix G, to determine whether construction and operation of the proposed project would result in significant effects on the environment. Since potentially significant effects were identified, LADWP determined that an EIR was needed to analyze those effects. A Notice of Preparation (NOP) of the EIR, along with the Initial Study, was prepared and filed with the State Clearinghouse on February 13, 2012. The NOP/Initial Study was distributed to 17 entities, and an additional 15 copies were provided to the State Clearinghouse for distribution. An additional 24 potentially interested parties received a notice of availability of the NOP/Initial Study. Reference copies were available at LADWP offices in Los Angeles, at three libraries in the project area in Los Angeles County, and via a link on the LADWP website. A copy of the

NOP/Initial Study is included as **Appendix A**. Comments on the scope and content of the EIR were received on the NOP from three regulatory agencies (**Appendix B**). Information included in this EIR responds to the comments raised by Caltrans and the South Coast Air Quality Management District (SCAQMD).

Additionally, Native American notification was conducted in February 2009 via letter to seven Native American contacts provided by the Native American Heritage Commission (NAHC). No responses were received. Comments received from the NAHC on the NOP (**Appendix B**) were addressed in the Initial Study for the project (**Appendix A**). Mitigation measures identified to reduce potential impacts on cultural resources are described in the EIR and will be included in the MMRP for the project.

2.7.2 Public Meeting

A public meeting on the proposed project will be held during the 45-day CEQA review period for the Draft EIR. The meeting will be held in the Sun Valley area close to the project site. Comments received on the Draft EIR will be addressed in the Final EIR.

2.7.3 Intended Uses of the EIR

The following permits or approvals are potentially relevant to the proposed project (**Table 2-2**).

2.8 AREAS OF KNOWN CONTROVERSY AND ISSUES TO BE RESOLVED

CEQA Guidelines Section 15123 requires that EIRs contain a discussion of areas of known controversy and issues to be resolved. There are no known areas of controversy related to the proposed project. A remaining issue to be resolved is the disposal location for excavated soils resulting from project construction.

2.8.1 Soil Disposal Location

As of July 2012, LADWP is coordinating with the Vulcan Materials Company in order to confirm disposal of project soils at Boulevard Pit. However, if timing of the project or other issues prevents disposal of excavation soils at this location, or disposal of the entire volume of excavated soils at this location, disposal may occur at one or more other locations. Although the precise location of the soil disposal site is unknown, impact analysis conducted for the EIR considers the potential alternatives.

Table 2-2
Permits or Approvals Potentially Required

Agency	Potentially Required Permit or Approval
U.S. Army Corps of Engineers	• Clean Water Act (CWA) 404 Permit, as applicable for construction of intake facilities • 33 USC Section 408 Review, as applicable for modification of federally authorized projects
California Department of Fish and Game	• Streambed Alteration Agreement, as applicable
California Department of Transportation, District 7	• Encroachment Permit for installation of conveyance facilities under State Highways • Permit for use of heavy equipment on State Highways, as applicable during mobilization of equipment
State Water Resources Control Board	• Construction of the project will be completed in compliance with the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, NPDES NO. CAS000002). Per the General Permit, a Storm Water Pollution Prevention Plan (SWPPP) incorporating best management practices (BMPs) for erosion control will be developed and implemented during project construction.
California Regional Water Quality Control Board, Los Angeles Region	• CWA Section 401 Water Quality Certification, as applicable
South Coast Air Quality Management District	• Compliance with Rule 403 (Fugitive Dust)
City of Los Angeles, Department of Recreation and Parks	• Design review of new recreation features
City of Los Angeles, Department of Transportation	• Review of Construction Traffic Management Plan and Traffic Control Plan, as applicable
City of Los Angeles, Department of Building and Safety	• Grading Permit • Haul Route Plan

Section 3
Project Description

The TSG Enhancement Project was identified by LADWP and designed by the Flood Control District in order to increase stormwater capture from the Upper Los Angeles River Watershed and groundwater recharge into the San Fernando Groundwater Basin at the TSG.

3.1 PROJECT DESCRIPTION

The proposed enhancement project for TSG will alter the current intake facility to capture low flows; create a treatment area for the low flows; install two new intake facilities to capture high flows from the Tujunga Wash and Pacoima Wash Channels; install devices to prevent widespread distribution of trash within the TSG; reactivate, deepen and/or combine basins to increase the facility's storage and recharge capacity; install new inter-basin flow controls; and install telemetry on new diversion facilities (**Figure 3-1)**. Modeling conducted by LADWP indicates that an average of 8,000 acre-feet of stormwater per year will be captured and recharged with the enhanced facility.

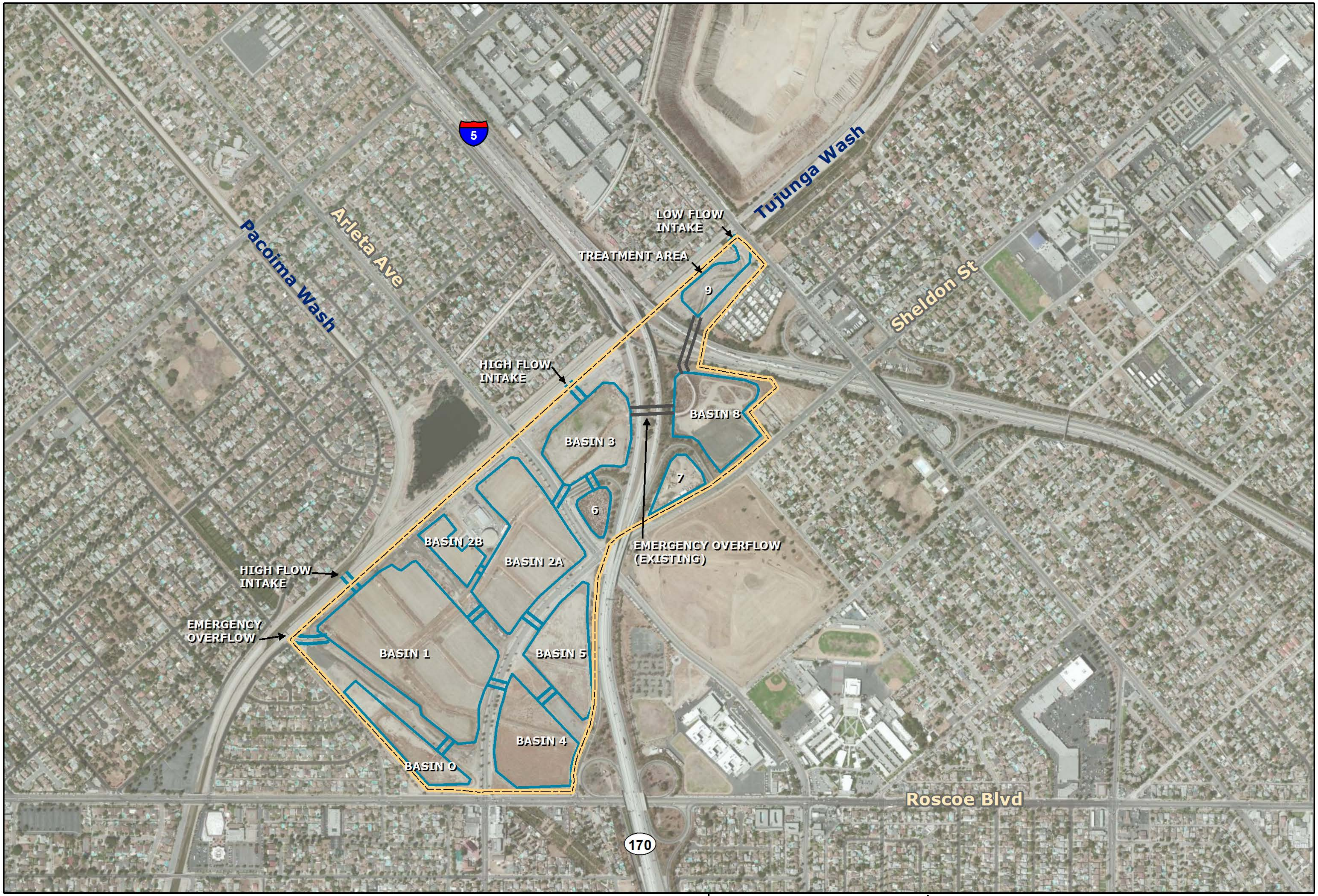
3.1.1 Existing Intake Structure

The operation of the existing intake structure, northeast of the I-5 / SR-170 interchange, will be altered to allow only low flow through the intake and a trash rack will be installed. Low flows will pass under I-5 using the existing conveyance pipe. Under the proposed project, the abandoned basins located southeast of the freeway interchange will be improved to provide treatment prior to recharging the groundwater. Water treatment will include attenuation to allow for settling of larger solids.

3.1.2 New Intake Structures

Two new intake structures will be built to take high flows from both the Tujunga and Pacoima Diversion Washes. Intake No. 1 will be located immediately southwest of the freeway interchange and will divert 250 cfs into the upper portion of the TSG. Intake No. 2 will be located immediately downstream of the confluence of the Tujunga Wash and Pacoima Wash Channels and will divert a maximum of 200 cfs into the lower portion of the TSG.

Two diversion gates with inflatable rubber dam operating systems (60-foot-wide and 104-foot-wide) will be used to direct Tujunga Wash and Pacoima Wash flows to the spreading basins. The rubber dams will be pneumatically raised and lowered as water flow conditions in the channel dictate to optimize water infiltration within the basins. Two electric-powered pumps (30 hp) will power the rubber dams.



Key to Features

- Proposed Spreading Basins
- Proposed (New or Modified) Conveyance
- Project Site
- Existing Conveyance

Document: TujungaSpreadingBasins.mxd

Date: June 21, 2012

Future Site Plan
Tujunga Spreading Grounds

MWH.

Figure 3-1

3.1.3 Basin Reconfiguration

The project will deepen and combine the basins to increase capacity. The existing TSG Basins A through N and Q through T will be graded to accept water from either intake system. The basins will be interconnected using weir spillways and bypass gates. The existing overflow from Basin B will continue to act as an overflow to Tujunga Wash. Basins O and P, which are the dormant, uppermost basins, located between I-5 and SR-170, will be reactivated, deepened, and able to accept low flows throughout the dry season, and may be able to accept flows during the wet season, depending on operational limitations and available flows. All basins west of SR-170 (Basins A through N and Q through T) will be deepened, and some combined, increasing storage and recharge capacity.

Currently, the water is distributed through the facility using a canal system and flashboard structures. This system will be replaced with modernized inter-basin weir structures and by-pass gates. The by-pass gates will be motorized. Approximate final basin capacities are shown in **Table 3-1**.

Table 3-1
Tujunga Spreading Grounds Proposed Basin Capacities

Basin	Acre-Feet*
O	50
1	341
2A	170
2B	34
3	121
4	113
5	65
6	14
7	10
8	29
9	4
Total	**951**

* 1 acre-foot = 325,851 gallons

3.1.4 Additional Project Elements

The entire TSG facility will be fenced. Adjacent to freeways, private property, and the Tujunga Wash Channel, chain link fence will be installed. The fence fronting the public right-of-way at Basins 3, 6, 7, 8, and 9 will be 8-ft tall tubular steel fence. The fence fronting the public right-of-way at Basins O, 1, 2, 4, and 5 will be split rail fence.

Additionally, depending on the availability of space on site, compatibility with the project, and funding opportunities, recreational enhancements may be added to the facility. Potential compatible uses for the property are walking trails, outdoor classrooms and associated educational activities, and native habitat enhancement.

3.2 ALTERNATIVES

CEQA Section 15126.6 requires description in an EIR of "a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives."

Since alternative designs for reconfiguration of the spreading basins would have similar environmental effects on air quality, noise and traffic as the proposed project (the impact areas that are the focus of this EIR), the definition of alternatives focuses on the area with the greatest potential for environmental effects – disposal of an estimated 1.3 million cubic yards of excess soil. During planning of the project, LADWP considered the following options.

3.2.1 Alternatives Considered During Project Planning

With a focus on reducing the impacts of the project related to soil hauling, the following alternatives were considered during initial project planning.

3.2.1.1 Balance Fill On-Site

If soils disturbed during basin reconfiguration could be balanced on-site, hauling of soils off-site would not occur. Therefore, air pollutant emissions, noise and traffic from haul trucks on city streets would not result. However, the spreading basins occupy almost all of the land at the TSG facility. Decreasing the total areal extent of basins was deemed infeasible since the goal of the project is to maximize stormwater recharge. Increasing the height of on-site berms was also considered. However, based on logistical constraints regarding berm design and available area, that alternative was deemed infeasible and was not considered further.

3.2.1.2 Conveyor to Boulevard Pit

Installation of a conveyor system from the TSG to the adjacent Boulevard Pit (11401 W. Tuxford Street) was considered. Vulcan Materials Company owns and operates Boulevard Pit; soils would be used for on-site improvements. The conveyor would be electric-powered, and to avoid crossing the I-5, would need to be installed in the Tujunga Wash Channel. Review by project engineers determined that this alternative was logistically problematic, and could interfere with normal operation of the stormwater channel. Therefore, the alternative was rejected as infeasible and was not considered further.

3.2.1.3 Trucks in Tujunga Wash Channel to Boulevard Pit

Transport of excavated soils in trucks traveling in the Tujunga Wash stormwater channel was also considered. The channel is wide enough for two-way truck traffic and would allow movement of soils from TSG to the Boulevard Pit without use of city streets. However, the facility is not designed for use by heavy trucks, and therefore structural damage to the stormwater channel could occur. Additionally, access points into and out of the channel would need to be constructed and only trucks less than 11 feet 3 inches in height could be used (maximum allowable due to bridge crossings). Use of the stormwater channel could only occur during the dry season, and would be subject to interruption if rain events occurred. Discussions with Los Angeles County Flood Control District (owners and operators of the Wash) determined that this alternative was not practicable. Therefore, this alternative was considered infeasible and was not considered further.

3.2.2 Alternatives to the Proposed Project

Since alternative soil disposal methods were found infeasible, excavated soils will be transported off the project site via haul trucks to nearby disposal locations. In addition to No Project, four alternative soil disposal locations were considered (**Figure 3-2**).

3.2.2.1 No Project

Under No Project, the spreading grounds would not be improved and there would be no disposal requirement for approximately 1.3 million cubic yards of soil. Additional stormwater could be diverted from the Tujunga Wash under No Project, since the methane gas migration concern at the adjacent Arleta Landfill has been resolved. However, high flows from the Pacoima and Tujunga Washes could not be diverted to the spreading basins. Since the trash racks and low flow treatment area would not be constructed under No Project, water quality would not be improved. Without the project, fine soils that reduce percolation would not be removed from the bottom of the basins and additional conveyance features would not be installed to transport stormwater among basins. The maximum volume of stormwater that could be recharged to the groundwater table under No Project is limited by the existing intake (250 cfs maximum), the storage capacity (100 acre-feet) and the existing percolation rate (140 cfs), substantially less than the volume anticipated under the project.

3.2.2.2 Boulevard Pit Disposal Site

Boulevard Pit, an active gravel pit owned by Vulcan Materials Company, is located directly northeast of the TSG. Under this alternative, soil excavated at the TSG would be used as part of a construction project at the pit. LADWP has been in communication with Vulcan Materials Company regarding use of TSG soils. Analysis of the sediments (soil classification and percolation test) indicates that the material is suitable for use for a ramp construction project at Boulevard Pit. Since the soil is needed by Vulcan at this location, and since this is the closest disposal location to the TSG, this is the preferred alternative for soil disposal for the project.

Key to Features

⬚	Project Site
▭	Potential Soil Disposal Locations

Document: TujungaSpreadingBasins.mxd

Date: March 26, 2012

Tujunga Spreading Grounds Enhancement Project Potential Soil Disposal Locations

MWH.

Figure 3-2

3.2.2.3 Sheldon Pit Disposal Site

Sheldon Pit is an exhausted gravel pit owned by Vulcan Materials Company. Located at the north end of the Sun Valley 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. 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 California Surface Mining and Reclamation Act (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. TSG soils could potentially be used for on-site construction projects at Sheldon Pit.

3.2.2.4 Cal Mat Pit Disposal Site

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. 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 owns and operates Cal Mat Pit under a City of Los Angeles Environmental Affairs Department solid waste facilities permit (Number 19-AR-1160). 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. TSG soils could potentially be landfilled at the Cal Mat Pit.

3.2.2.5 Bradley Landfill and Recycling Center Disposal Site

Owned and operated by Waste Management, Inc., the Bradley Landfill and Recycling Center (Sun Valley Recycling Park) is focused on recycling green waste and other materials, converting gas to energy (providing electric power for more than 6,000 homes), waste hauling, and post-closure activities related to the Bradley Landfill such as monitoring of air and groundwater (the landfill closed April 14, 2007). The facility does not currently accept soil for disposal. However, the location was considered since the Recycling Park may require soil for on-site construction projects in the future within the multi-year construction period for the project.

3.2.2.6 Combination of Disposal Alternatives

As of July 2012, LADWP is coordinating with Vulcan Materials Company in order to confirm disposal of project soils at Boulevard Pit. However, if timing of the project or other issues prevents disposal of excavation soils at this location, or disposal of the entire volume of excavated soils at this location, disposal may occur at several of the noted sites. Although the precise location of disposal site is unknown, impact analysis presented in **Section 4** considers the four potential alternatives.

3.3 CONSTRUCTION ACTIVITIES

Construction activities would include site preparation and clearing, basin excavation, berm building and basin bottom forming, and installation of conveyance, intake and trash rack structures. In order to estimate air pollutant emissions related to project construction, a detailed list of construction equipment is included in **Section 4.1**, Air Quality. This list of equipment and estimated duration of use are estimates only. Actual construction practices, including equipment use, soil hauling truck size, number of active construction areas, etc., will be determined by the contractor. Los Angeles County will oversee construction of the project; however, the County does not specify means and methods in their construction contracts. Therefore, a detailed description of actual construction activities for the project cannot be provided here.

3.3.1 Construction Assumptions

The following are assumptions used for EIR impact analysis. They reflect a reasonable description of how construction may occur, but are assumptions only, not specific limitations that will be imposed on the contractor. During project construction it is assumed that:

- All construction staging and basin reconfiguration activities would occur within the boundaries of the existing spreading grounds.
- Site access for construction equipment and personnel would be via the existing facility entrances on Sheldon Street and Arleta Avenue.
- Construction of the project will be phased to allow continued operation of the spreading grounds during the initial phases of construction. For example, if basins 3 through 8 were taken out of service, basins 1, 2A and 2B could remain in service through the first rainy season in order to maximize groundwater recharge during construction of the enhancement project.
- Soil haul trucks capacity will average 15 to 18 cubic yards (assumed to be a mix of 10 cubic yard and 20 cubic yard trucks). A total of approximately 1.3 million cubic yards of material will require disposal.
- Approximately 2.1 to 2.6 years (560 to 680 work days) will be required for off-site soil disposal (based on the assumed truck capacity of 15 to 18 cubic yards), starting in approximately late 2013.
- The majority of construction is assumed to occur 5 days per week, approximately 8 hours per day, during daylight hours. Longer work days and work on Saturdays may occur.
- Up to approximately 40 construction personnel will be required.
- A tunneling machine will be used at two locations to install the conveyance pipelines under the I-5. Coordination with and approval by Caltrans will be required.

3.4 PROJECT OPERATION

3.4.1 Maintenance

After completion of the project, maintenance activities at the TSG would be similar to existing practices, with some increase in landscape maintenance from installation of the recreation enhancements and landscaping. Maintenance activities will include vegetation maintenance and removal (e.g., mowing) and periodic sediment removal from the basins. Basin maintenance (done in the dry) includes scraping the surface and removing soil fines, then (potentially) tilling the surface soils. Excavated materials are hauled by truck to off-site disposal locations. With implementation of the proposed project, no new operators will be required. Trash removal systems installed under the project will necessitate periodic disposal of rubbish and accumulated fine soils.

3.4.2 Methane Gas Monitoring

LABOS manages the City-owned closed Sheldon-Arleta Landfill, located directly east of the TSG. Phase I of the Cesar Chavez Recreation Complex Project (completed in 2010) upgraded the landfill's methane gas extraction system to prevent methane gas migration from the landfill to adjacent properties. The system consists of vertical extraction wells feeding a flare station. The gas management system was improved by the installation of new gas collection and migration wells, new lateral and header lines, a new gas condensate management system, and relocating the gas flare station and adding a new gas flare and new gas blowers.

With the upgraded gas extraction system, methane migration to the neighborhood is not anticipated, even with full operation of the enhanced TSG. However, in order to ensure proper operation of the gas extraction system, methane monitoring is conducted by LABOS; probes are located along the landfill perimeter and at Polytechnic High School. Monitoring results are used to fine-tune operation of the gas collection system. Per 27 CCR §20921, the concentration of methane gas migrating from the disposal site must not exceed 5 percent by volume in air at the disposal site permitted facility boundary. In the event of substantial methane gas migration that cannot be controlled by the existing gas collection system, LABOS would notify the Flood Control District and LADWP. A determination would then be made as to diversion of some, or all, of storm flows from the TSG. Bypassed flows would be conveyed south in Tujunga Wash, ultimately connecting to the Los Angeles River. Operation of the gas extraction system would then be reviewed and modifications made as warranted, prior to lifting flow restrictions at the TSG.

3.5 RELATED PROJECTS

Under CEQA, an EIR must include an evaluation of the cumulative impacts of the project and related projects (State CEQA Guidelines Section 15130). CEQA defines cumulative impacts as "two or more individual effects which, when considered together, are considerable, or which can compound or increase other environmental impacts." Section 15130(b) identifies the "list approach" and the "planning scenario approach" for evaluating cumulative impacts. This EIR uses the list approach for closely related past, present, and reasonably foreseeable probably future projects producing related or cumulative impacts.

Relevant past and present related projects are operation of the Tujunga Wellfield and other stormwater spreading basins in the San Fernando Basin.

The proposed project does not include any alteration to the existing 12 potable water wells that comprise the Tujunga Wellfield. Since the project will increase groundwater volumes without any deterioration of water quality (See Section 2.3.9 of the Initial Study, **Appendix A**), there are no adverse cumulative effects of the wellfield operation and the proposed project.

The San Fernando Valley Groundwater Basin was adjudicated in 1979 and includes the water-bearing sediments beneath the San Fernando Valley, Tujunga Valley, Browns Canyon, and the alluvial areas surrounding the Verdugo Mountains near La Crescenta and Eagle Rock. The basin is bounded on the north and northwest by the Santa Susana Mountains, on the north and northeast by the San Gabriel Mountains, on the east by the San Rafael Hills, on the south by the Santa Monica Mountains and Chalk Hills, and on the west by the Simi Hills. The valley is drained by the Los Angeles River and its tributaries. Los Angeles County operates other spreading grounds to recharge the San Fernando Basin. Hansen Spreading Grounds are located just north of the project site and receive flows from Tujunga Wash. Pacoima Spreading Grounds are northwest of the TSG and recharge storm flows from the Pacoima Wash. The small Branford Basin is located immediately adjacent to the TSG upstream of the confluence of the Tujunga and Pacoima Washes. Along with TSG, these facilities percolate stormwater into the San Fernando Basin; a beneficial cumulative impact for groundwater supplies. Operation of the other spreading basins in the area with construction of the TSG enhancement project would not have other, adverse cumulative impacts.

Therefore, cumulative impact assessment focuses on projects identified by the City in July 2011 that may have cumulative impacts during construction. The planned construction projects are in the vicinity of the TSG and may be constructed in a similar time frame (2012 to 2015) as the proposed project. The related projects include housing, schools, and a commercial development (**Table 3-2**) and are all located within 1.5 miles of the TSG (**Figure 3-3**). These projects were deemed to be relevant since they could have cumulative traffic impacts on the same intersections affected by the proposed project if construction periods overlap. Projects more distant from the TSG would not have cumulative transportation or noise impacts. Cumulative impacts of these related projects are discussed by environmental topic in **Section 4** of this EIR.

Table 3-2
Related Projects

Project Number	Location	Type of Development	Size of Development
1	12501 Sheldon Street	Multi-Family Residential	63 dwelling units
2	8401 Arleta Avenue	Middle School	1,053 students
3	9171 Telfair Avenue	High School	1,620 students
4	13000 Montague Street	Elementary School	400 students
5	9582 Haddon Avenue	Condominiums	125 dwelling units
6	8755 Woodman Avenue	Middle School	480 students
7	7934 Lankershim Boulevard	Shopping Center	60,000 square feet

Source: City of Los Angeles, 2011.

Key to Features

▭ Tujunga Spreading Grounds Project Site

1 - Multi-Family Residential
2 - Middle School
3 - High School
4 - Elementary School
5 - Condominiums
6 - Middle School
7 - Shopping Center

Document: RelatedProjects.mxd

Date: March 26, 2012

MWH.

Related Projects

Figure 3-3

Section 4.1
Air Quality

4.1 AIR QUALITY

Based on the information presented in the Initial Study for the project (**Appendix A**), LADWP determined that the project could have the potential to significantly impact air quality as related to the applicable air quality and greenhouse gas reduction plans, violation of air quality standards, cumulative net increases in criteria pollutants, greenhouse gas emissions, exposure of sensitive receptors to substantial pollutant concentrations, and creation of objectionable odors affecting a substantial number of people. Additionally, a comment letter received from the South Coast Air Quality Management District (SCAQMD) on the NOP outlined air quality analysis required for the project (**Appendix B**). Therefore, the impact of the proposed project on air quality and greenhouse gas emissions has been carried forward for detailed analysis in this EIR.

4.1.1 Resource Overview

4.1.1.1 Criteria Pollutants

Air quality is defined by ambient air concentrations of specific pollutants determined by the United States Environmental Protection Agency (USEPA) to be of concern with respect to the health and welfare of the general public. Seven major pollutants of concern, called "criteria pollutants," are carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), suspended particulate matter less than or equal to 10 microns in diameter (PM_{10}), fine particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$), and lead (Pb). The USEPA has established National Ambient Air Quality Standards (NAAQS) for these pollutants. Areas that violate a federal air quality standard are designated as non-attainment areas.

Ambient air quality refers to the atmospheric concentration of a specific compound (amount of pollutants in a specified volume of air) that occurs at a particular geographic location. The ambient air quality levels measured at a particular location are determined by the interactions of emissions, meteorology, and chemistry. Emission considerations include the types, amounts, and locations of pollutants emitted into the atmosphere. Meteorological considerations include wind and precipitation patterns affecting the distribution, dilution, and removal of pollutant emissions. Chemical reactions can transform pollutant emissions into other chemical substances. Ambient air quality data are generally reported as a mass per unit volume (e.g., micrograms per cubic meter of air) or as a volume fraction (e.g., parts per million [ppm] by volume).

Pollutant emissions typically refer to the amount of pollutants or pollutant precursors introduced into the atmosphere by a source or group of sources. Pollutant emissions contribute to the ambient air concentrations of criteria pollutants, either by directly affecting the pollutant concentrations measured in the ambient air or by interacting in the atmosphere to form criteria pollutants. Primary pollutants, such as CO, SO_2, Pb, and some particulates, are emitted directly into the atmosphere from emission sources.

Secondary pollutants, such as O_3, NO_2, and some particulates, are formed through atmospheric chemical reactions that are influenced by meteorology, ultraviolet light, and other atmospheric processes. PM_{10} and $PM_{2.5}$ are generated as primary pollutants by various mechanical processes (for example, abrasion, erosion, mixing, or atomization) or combustion processes. However, PM_{10} and $PM_{2.5}$ can also be formed as secondary pollutants through chemical reactions or by gaseous pollutants condensing into fine aerosols. In general, emissions that are considered "precursors" to secondary pollutants in the atmosphere (such as reactive organic gases [ROG] and oxides of nitrogen [NOx], which are considered precursors for O_3), are the pollutants for which emissions are evaluated to control the level of O_3 in the ambient air.

Existing air quality at a given location can be described by the concentrations of various pollutants in the atmosphere. Pollutants are defined as two general types: (1) "criteria" pollutants and (2) toxic compounds. Criteria pollutants have national and/or state ambient air quality standards. The USEPA establishes the NAAQS, while the California Air Resources Board (CARB) establishes the state standards, termed the California Ambient Air Quality Standards (CAAQS). The NAAQS represent maximum acceptable concentrations that generally may not be exceeded more than once per year, except the annual standards, which may never be exceeded. The CAAQS represent maximum acceptable pollutant concentrations that are not to be equaled or exceeded.

4.1.1.2 Toxic Air Contaminants

Toxic air contaminants (TACs) are substances with the potential to be emitted into the ambient air that have been determined to present some level of acute or chronic health risk (cancer or non-cancer) to the general public. These pollutants may be emitted in trace amounts from various types of sources, including combustion.

4.1.1.3 Greenhouse Gas Emissions

Greenhouse gases (GHGs) are gases that trap heat in the atmosphere. These emissions occur from natural processes as well as human activities. The accumulation of GHGs in the atmosphere regulates the earth's temperature. Scientific evidence indicates a trend of increasing global temperature over the past century, which a number of scientists attribute to an increase in GHG emissions from human activities. The climate change associated with this global warming is predicted to produce negative economic and social consequences across the globe.

Recent observed changes due to global warming include shrinking glaciers, thawing permafrost, a lengthened growing season, and shifts in plant and animal ranges (Intergovernmental Panel on Climate Change, 2007). Generally accepted predictions of long-term environmental impacts due to global warming include sea level rise, changing weather patterns with increases in the severity of storms and droughts, changes to local and regional ecosystems including the potential loss of species, and a significant reduction in winter snow pack.

The most common GHGs emitted from natural processes and human activities include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Examples of GHGs created and emitted primarily through human activities include fluorinated gases (hydrofluorocarbons and perfluorocarbons) and sulfur hexafluoride. Each GHG is assigned a global warming potential.

The global warming potential is the ability of a gas or aerosol to trap heat in the atmosphere. The global warming potential rating system is standardized to CO_2, which has a value of one. For example, based on the latest IPCC report, CH_4 has a global warming potential of 25, which means that it has a global warming effect 25 times greater than CO_2 on an equal-mass basis. Total GHG emissions from a source are often reported as a CO_2 equivalent (CO_2e). The CO_2e is calculated by multiplying the emission of each GHG by its global warming potential and adding the results together to produce a single, combined emission rate representing all GHGs. On a national scale, federal agencies are addressing emissions of GHGs by reductions mandated in federal laws and Executive Orders, most recently, Executive Order 13423 Strengthening Federal Environmental, Energy, and Transportation Management (January 24, 2007) was enacted. Several states have promulgated laws as a means to reduce statewide levels of GHG emissions. In particular, the California Global Warming Solutions Act of 2006 directs the State of California to reduce statewide GHG emissions to 1990 levels by the year 2020.

Assembly Bill (AB) 32, California Global Warming Solutions Act of 2006, was signed into law on September 27, 2006. With the Governor's signing of AB 32, the Health and Safety Code (Section 38501, Subdivision (a)) now states the following: "*Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems*."

The potential effects of proposed GHG emissions are by nature global, and have cumulative impacts. GHG emissions from individual sources are not large enough to have an appreciable effect on climate change. Therefore, the impact of proposed GHG emissions to climate change is discussed in the context of cumulative impacts.

As a power utility, the majority of LADWP's GHG emissions results from power generation. As with the proposed project, other GHG emissions are a result of vehicle and equipment use for construction and operation of LADWP facilities. To reduce Department-wide GHG emissions, LADWP has instituted various programs including: providing rebates to encourage use of energy efficient equipment, use of electric fleet vehicles, retrofitting City-owned facilities for increased energy efficiency, and promoting the installation of solar and renewable power.

4.1.2 Regulatory Framework

4.1.2.1 Federal Regulations

The Federal Clean Air Act (CAA) and its subsequent amendments establish air quality regulations and the NAAQS, and delegate the enforcement of these standards to the states. In California, the CARB is responsible for enforcing air pollution regulations. The CARB has in turn delegated the responsibility of regulating stationary emission sources to regional air agencies. In the South Coast Air Basin, the SCAQMD has this responsibility. The national and state ambient air quality standards are shown in **Table 4.1-1**. In California, the CARB is responsible for enforcing both the federal and state air pollution standards.

Table 4.1-1
National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards [a]	
			Primary [b,c]	Secondary [b,d]
Ozone (O_3)	8-hour	0.070 ppm (137 μg/m^3)	0.075 ppm (147 μg/m^3)	Same as primary
	1-hour	0.09 ppm (180 μg/m^3)	—	—
Carbon monoxide (CO)	8-hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	—
	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	—
Nitrogen dioxide (NO_2)	Annual	0.030 ppm (56 μg/m^3)	0.053 ppm (100 μg/m^3)	Same as primary
	1-hour	0.18 ppm (338 μg/m^3)	0.100 ppm (188 μg/m^3)	Same as primary
Sulfur dioxide (SO_2)	24-hour	0.04 ppm (105 μg/m^3)	—	—
	3-hour	—	—	0.5 ppm (1,300 μg/m^3)
	1-hour	0.25 ppm (655 μg/m^3)	0.075 ppm (196 μg/m^3)	—
PM_{10}	Annual	20 μg/m^3	—	—
	24-hour	50 μg/m^3	150 μg/m^3	Same as primary
$PM_{2.5}$	Annual	12 μg/m^3	15.0 μg/m^3	
	24-hour	—	35 μg/m^3	
Lead (Pb)	Rolling 3-month period	—	0.15 μg/m^3	Same as primary
	Calendar Quarter	—	1.5 μg/m^3	Same as primary
	30-day average	1.5 μg/m^3	—	—
Hydrogen Sulfide (H_2S)	1-hour	0.03 ppm (42 μg/m^3)	—	—

Source: CARB, 2012a.

Notes:

[a] Standards other than the 1-hour ozone, 24-hour PM_{10}, 24-hour $PM_{2.5}$, and those based on annual averages are not to be exceeded more than once a year. The 8-hour ozone national standard has replaced the 1-hour ozone national standard.

[b] Concentrations are expressed first in units in which they were promulgated. Equivalent units given in parenthesis.

[c] Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health. Each state must attain the primary standards no later than 3 years after that state's implementation plan is approved by USEPA.

[d] Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

The 1977 CAA Amendments required each state to develop and maintain a State Implementation Plan (SIP) for each criteria pollutant that exceeds the NAAQS. The SIP serves as a tool to develop strategies to reduce emissions of pollutants that cause exceedances of the NAAQS, and to achieve compliance with the NAAQS. The SIP outlines federally enforceable rules, regulations, and programs designed to reduce emissions and bring the area into attainment of the NAAQS. In 1990, The CAA was amended to strengthen regulation of both stationary and mobile sources of criteria pollutants, and also to implement regulations to control emissions of hazardous air pollutants and ozone-depleting substances.

As indicated in Federal Register Volume 75, No. 11, Page 2938, the USEPA is considering lowering the 8-hour O_3 standard from 0.075 ppm, which is its current level, to a lower level within the range of 0.060 and 0.070 ppm. The lower level is proposed to provide increased protection for children and other “at risk” populations against O_3 health effects.

USEPA GHG Findings. On April 17, 2009, USEPA issued its proposed endangerment finding for GHG emissions. On December 7, 2009, the USEPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

> **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases - carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) - in the atmosphere threaten the public health and welfare of current and future generations.
>
> **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

The endangerment findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing the USEPA’s proposed GHG emission standards for light-duty vehicles, which were jointly proposed by USEPA and the Department of Transportation’s National Highway Safety Administration on September 15, 2009.

Mandatory GHG Reporting Rule. On March 10, 2009, in response to the FY2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110–161), USEPA proposed a rule that requires mandatory reporting of GHG emissions from large sources in the United States. On September 22, 2009, the Final Mandatory Reporting of Greenhouse Gases Rule was signed, and was published in the Federal Register on October 30, 2009. The rule became effective on December 29, 2009. The rule will collect accurate and comprehensive emissions data to inform future policy decisions.

USEPA is requiring suppliers of fossil fuels or industrial GHG, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG to submit annual reports to USEPA. The gases covered by the proposed rule are CO_2, CH_4, N_2O, HFCs, PFCs,

SF_6, and other fluorinated gases including nitrogen trifluoride (NF_3) and hydrofluorinated ethers (HFE).

Corporate Average Fuel Economy Standards. The federal Corporate Average Fuel Economy (CAFE) standard determines the fuel efficiency of certain vehicle classes in the United States. In 2007, as part of the Energy and Security Act of 2007, CAFE standards were increased for new light-duty vehicles to 35 miles per gallon by 2020. In May 2009, President Obama announced plans to increase CAFE standards to require light-duty vehicles to meet an average fuel economy of 35.5 miles per gallon by 2016. On April 1, 2010, the U.S. Department of Transportation and the USEPA established historic new federal rules that set the first-ever national GHG emissions standards and will significantly increase the fuel economy of all new passenger cars and light trucks sold in the United States. The standards set a requirement to meet an average fuel economy of 34.1 miles per gallon by 2016.

4.1.2.2 State Regulations

The CARB has oversight over air quality in the state of California. Regulation of individual stationary sources has been delegated to local air pollution control agencies. The CARB is responsible for developing programs designed to reduce emissions from non-stationary sources, including motor vehicles and off-road equipment.

The CARB and the California Office of Environmental Health Hazard Assessment (OEHHA) are also responsible for developing regulations governing TACs. TACs include air pollutants that can cause serious illnesses or increased mortality, even in low concentrations. The CARB and OEHHA identify specific air pollutants as TACs, develop health thresholds for exposure to TACs, and develop guidelines for conducting health risk assessments for sources of TAC emissions.

Signed into law in 2006, AB 32 directed CARB to do the following:

- Make publicly available a list of discrete early action GHG emission reduction measures that can be implemented prior to the adoption of the statewide GHG limit and the measures required to achieve compliance with the statewide limit.
- Make publicly available a GHG inventory for the year 1990 and determine target levels for 2020.
- On or before January 1, 2010, adopt regulations to implement the early action GHG emission reduction measures.
- On or before January 1, 2011, adopt quantifiable, verifiable, and enforceable emission reduction measures by regulation that will achieve the statewide GHG emissions limit by 2020, to become operative on January 1, 2012, at the latest. The emission reduction measures may include direct emission reduction measures, alternative compliance mechanisms, and potential monetary and non-monetary incentives that reduce GHG emissions from any sources or categories of sources that ARB finds necessary to achieve the statewide GHG emissions limit.

- Monitor compliance with and enforce any emission reduction measure adopted pursuant to AB 32.

AB 32 required that by January 1, 2008, ARB determine what the statewide GHG emissions level was in 1990, and approve a statewide GHG emissions limit that is equivalent to that level, to be achieved by 2020. CARB adopted its Climate Change Scoping Plan in December 2008, and re-approved it on August 24, 2011. The Plan provides estimates of the 1990 GHG emissions level and indicates how emission reductions will be achieved from significant GHG sources via regulations, market mechanisms and other actions. The CARB has estimated that the 1990 GHG emissions level was 427 million metric tons (MMT) net CO2e (CARB, 2007b). The CARB estimates that a redu-ction of 173 MMT net CO2e emissions below business-as-usual would be required by 2020 to meet the 1990 levels (CARB, 2007b). This amounts to a 15-percent reduction from today's levels, and a 30-percent reduction from projected business-as-usual levels in 2020 (CARB, 2008a).

Senate Bill 97, enacted in 2007, amends the CEQA statute to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis. It directs The Governor's Office of Planning and Research (OPR) to develop draft CEQA guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions" by July 1, 2009 and directs the Resources Agency to certify and adopt the CEQA guidelines by January 1, 2010.

OPR published a technical advisory on CEQA and Climate Change on June 19, 2008. The guidance did not include a suggested threshold, but stated that the OPR has asked CARB to "recommend a method for setting thresholds which will encourage consistency and uniformity in the CEQA analysis of greenhouse gas emissions throughout the state." OPR does recommend that CEQA analyses include the following components:

- Identify greenhouse gas emissions
- Determine significance
- Mitigate impacts

In April 2009, OPR published its proposed revisions to CEQA to address GHG emissions. The amendments to CEQA indicate the following:

- Climate action plans and other GHG reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the GHG emissions of proposed projects, noting that they have the freedom to select the quantitative and qualitative models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.

- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of GHG emissions in Appendix F of the CEQA Guidelines.
- OPR is clear to state that “to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation.”
- OPR’s emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- EIRs must specifically consider a project's energy use and energy efficiency potential.

On July 3, 2009, the California Natural Resources Agency published proposed amendment of regulations based on OPR’s proposed revisions to CEQA to address GHG emissions. On that date, the Natural Resources Agency commenced the Administrative Procedure Act rulemaking process for certifying and adopting these amendments pursuant to Public Resources Code section 21083.05. Having reviewed and considered all comments received, the Natural Resources Agency revised the CEQA regulation. The new regulations became effective on March 18, 2010.

4.1.2.3 Local Regulations

The air districts in California are responsible for regulating stationary sources within their jurisdictions, and for preparing air quality plans required under the CAA and the CCAA. The SCAQMD is the local agency responsible for planning, implementing, and enforcing state and federal ambient air quality standards within the South Coast Air Basin (SCAB), which includes Los Angeles, Orange, portions of Riverside, and portions of San Bernardino Counties. The SCAQMD has developed its Air Quality Management Plan (AQMP), which provides a summary of the measures and regulations that have been or will be implemented to govern air quality in the Basin and meet the ambient air quality standards. The AQMP includes strategies for meeting the 8-hour O_3 standard and the particulate standards, and includes a maintenance plan for the CO standard.

Emission limitations are imposed upon sources of air pollutants operating in the Basin by the SCAQMD’s Rules and Regulations, and statewide by CARB. Operation of emission sources during the construction of the proposed project will not interfere with progress toward attainment of the federal and State standards, provided they are compliant with applicable regulations. The following SCAQMD rules apply to the proposed project:

- SCAQMD Rule 401 – Visible Emissions: This rule prohibits any activity that will create air contaminant emissions darker than No. 1 on the Ringlemann Chart for more than an aggregate of three minutes in any consecutive 60-minute period.

- SCAQMD Rule 402 – Nuisance: This rule prohibits the discharge of such quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public, or injury or damage to property.

- SCAQMD Rule 403 – Fugitive Dust: This rule sets forth the requirements to include fugitive dust control measures for all construction activities. Rule 403 requires implementation of Best Available Control Measures to reduce emissions of fugitive dust.

In accordance with the City of Los Angeles General Plan's Air Quality Element (City of Los Angeles, 1992), the project must also (a) minimize particulate emissions from construction sites, and (b) minimize particulate emissions from unpaved roads and parking lots which are associated with vehicular traffic.

4.1.3 Existing Conditions

4.1.3.1 Regional Climate

Meteorological data from the Western Regional Climate Center (WRCC, 2012) are available for Tujunga, California for the period from 1966 through 1987. Data from this location are representative of conditions at the project site. The Tujunga monitoring station measured temperature, precipitation (including snowfall), heating degree days, and cooling degree days. Monthly average temperatures and precipitation for Tujunga are summarized in **Table 4.1-2**.

Table 4.1-2
Monthly Average Temperatures and Precipitation
Tujunga Meteorological Station

Month	Temperature, °F		Precipitation (inches)
	Minimum	Maximum	
January	42.6	64.1	4.11
February	43.4	67.0	4.37
March	43.5	68.0	4.31
April	45.4	72.2	1.54
May	50.4	77.3	0.47
June	54.9	84.6	0.06
July	59.7	91.9	0.02
August	60.4	90.9	0.16
September	58.5	85.3	0.63
October	52.7	77.4	0.39
November	46.4	69.0	2.34
December	42.3	64.2	2.43
Annual	50.0	76.0	20.83

Source: WRCC, 2012.

SCAQMD operates a series of ambient air quality monitoring stations throughout the SCAB. The closest monitoring site to the TSG is located in Burbank on W. Palm Avenue. **Table 4.1-3** provides a summary of background air quality representative of the project area.

Table 4.1-3
Representative Air Quality Data for the Project Area (2006-2010)(1)

Air Quality Indicator	2006	2007	2008	2009	2010
Ozone (O_3)					
Peak 1-hour value (ppm)	0.166	0.116	0.133	0.145	0.111
Days above state standard (0.09 ppm)	25	13	20	16	3
Peak 8-hour value (ppm)	0.128	0.096	0.109	0.096	0.084
Days above state standard (0.070 ppm)	34	19	34	28	9
Days above federal standard (0.075 ppm)(2,4)	22	13	17	14	4
PM_{10}					
Peak 24-hour value ($\mu g/m^3$)	71	109	118.5	130.3	51
Days above state standard (50 $\mu g/m^3$)	10	5	5	10	0
Days above federal standard (150 $\mu g/m^3$)	0	0	0	0	0
Annual Average value ($\mu g/m^3$))	31.7	24.0	34.5	25.7	27.5
$PM_{2.5}$					
Peak 24-hour value ($\mu g/m^3$) (3)	50.7	56.5	57.4	67.5	43.7
Days above federal standard (35 $\mu g/m^3$)	6	9	2	11	4
Annual Average value ($\mu g/m^3$))	16.5	16.8	13.9	14.3	12.4
CO					
Peak 8-hour value (ppm)	3.38	2.78	2.48	2.89	2.35
Days above state standard (9.0 ppm)	0	0	0	0	0
Days above federal standard (9 ppm)	0	0	0	0	0
NO_2					
Peak 24-hour value (ppm)	0.103	0.087	0.105	0.088	0.082
Days above state standard (0.18 ppm)	0	0	0	0	0
Days above federal standard (0.100 ppm) (5)	0	0	0	0	0
Annual Average value (ppm)	0.027	0.029	0.029	0.027	0.024
SO_2					
Peak 24-hour value (ppm)	0.004	0.003	0.003	0.003	0.004
Days above state standard (0.04 ppm)	0	0	0	0	0

Notes*:* (1) Data from the Burbank monitoring station.

(2) The federal O_3 standard was revised downward in 2008 to 0.075 ppm.

(3) The federal $PM_{2.5}$ standard was revised downward in 2007 to 35 $\mu g/m^3$.

(4) The federal 8-hour ozone standard was previously defined as 0.08 ppm (1 significant digit). Measurements were rounded up or down to determine compliance with the standard; therefore a measurement of 0.084 ppm is rounded to 0.08 ppm. The 8-hour ozone ambient air quality standards are met at an ambient air quality monitoring site when the average of the annual fourth-highest daily maximum 8-hour average ozone concentration is less than or equal to the standard.

(5) The federal 1-hour NO_2 standard is defined by the 3-year average of the annual 98th percentile of the maximum daily 1-hour concentrations.

ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter

Source: CARB, 2012b.

4.1.3.2 Compliance with Air Quality Standards

CARB designates portions of the State where federal or State ambient air quality standards are not met as nonattainment areas. **Table 4.1-4**, SCAB Attainment Classification for Criteria

Pollutants, summarizes the air quality attainment status for the Basin. Where a pollutant exceeds standards, the federal and State CAAs require air quality management plans that demonstrate how the standards will be achieved. These plans provide the basis for the implementing agencies to develop regulations governing air quality and to develop mobile and stationary source standards.

Table 4.1-4
South Coast Air Basin Attainment Classification for Criteria Pollutants

Pollutant	CAAQS Attainment Classification	NAAQS Attainment Classification
Ozone	Nonattainment	Extreme nonattainment
Carbon monoxide	Attainment	Maintenance
Nitrogen dioxide	Attainment	Nonattainment
Sulfur dioxide	Attainment	Attainment
Particulate matter less than 10 microns in diameter	Nonattainment	Serious nonattainment
Particulate matter less than 2.5 microns in diameter	Nonattainment	Nonattainment
Lead	Attainment	Nonattainment (Los Angeles County)
Sulfates	Attainment	Not applicable
Hydrogen sulfide	Unclassified	Not applicable
Vinyl chloride	Unclassified	Not applicable

4.1.4 Significance Criteria

The SCAQMD has adopted significance thresholds in its SCAQMD CEQA Air Quality Handbook (SCAQMD, 1993). These thresholds are arranged in three parts starting with the broadest and narrowing to the most specific. The general thresholds are derived from Appendix G of the State CEQA Guidelines, and indicate that a project could have potentially significant impacts if it could:

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 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 release emissions which exceed quantitative thresholds for ozone precursors); or

d. Expose sensitive receptors to substantial pollutant concentrations including air toxics such as diesel particulates.

The second level of significance set forth in the SCAQMD's significance thresholds presents quantitative emissions thresholds by which to evaluate whether a project's impacts could have a significant impact on air quality. The quantitative emission thresholds are included in **Table 4.1-5**, Air Quality Significance Thresholds.

To further evaluate the potential for significant impacts associated with the construction phase, the SCAQMD's *Final Localized Significance Threshold Methodology* was used (SCAQMD, 2003a). The Localized Significance Threshold (LST) Methodology provides a look-up table for construction and operational emissions based on the emission rate, location, and distance from receptors, and provides a methodology for air dispersion modeling to evaluate whether construction or operation could cause an exceedance of an ambient air quality standard. The LST lookup tables are applicable only to sources that are 5 acres or less in size. The LST Methodology only applies to impacts to NO_2, CO, PM_{10}, and $PM_{2.5}$ concentrations.

According to the LST Methodology, the proposed project is located in Source Receptor Area Zone 7, the East San Fernando Valley Zone. The LSTs for the East San Fernando Valley are shown in **Table 4.1-6**, based on the distance to the nearest receptor.

For the purpose of evaluating potential impacts, it was assumed the active site would be 5 acres, and the closest receptor would be 50 meters (164 feet) from construction activities.

Project-related GHG emissions are considered to be significant if they:

a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG.

SCAQMD's interim threshold of significance for GHG for industrial projects is 10,000 metric tons CO_2-equivalent emissions per year (adopted December 5, 2008; includes construction emissions amortized over 30 years and added to operational GHG emissions). CARB proposed a threshold of 7,000 metric tons of CO_2-equivalent emissions per year for operational emissions (excluding transportation) (CARB, 2008b).

The impacts associated with the proposed project were evaluated based on these significance criteria.

Table 4.1-5
SCAQMD Air Quality Significance Thresholds

Pollutant	Construction	Operation
Criteria Pollutants Mass Daily Thresholds		
NO_x	100 lbs/day	55 lbs/day
ROG	75 lbs/day	55 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day
SO_x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
TAC, AHM, and Odor Thresholds		
Toxic Air Contaminants (TACs)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden ≥ 0.5 (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 MT/yr CO_2e for industrial facilities	
Ambient Air Quality for Criteria Pollutants		
NO_2	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 (state) and 0.0534 (federal)	
PM_{10} 24-hour average annual average	10.4 μg/m^3 construction and 2.5 μg/m^3 operation 1.0 μg/m^3	
$PM_{2.5}$ 24-hour average	10.4 μg/m^3 construction and 2.5 μg/m^3 operation	
SO_2 1-hour average 24-hour average	0.25 ppm (state) and 0.075 ppm (federal – 99th percentile) 0.04 ppm (state)	
Sulfate 24-hour average	25 μg/m^3 (state)	
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 0.0 (state/federal)	
Lead 30-day average Rolling 3-month average Quarterly average	1.5 μg/m^3 (state) 0.15 μg/m^3 (federal) 1.5 μg/m^3 (federal)	
Notes: μg/m^3 = microgram per cubic meter; pphm = parts per hundred million; mg/m^3 = milligram per cubic meter; ppm = parts per million; TAC = toxic air contaminant; AHM = Acutely Hazardous Material		

Source: SCAQMD, http://www.aqmd.gov/ceqa/handbook/signthres.pdf

Table 4.1-6
Localized Significance Thresholds, lbs/day

Distance to Nearest Receptor, meters[1]	Pollutant					
	NOx	CO	PM_{10} - Construction	PM_{10} – Operation	$PM_{2.5}$ - Construction	$PM_{2.5}$ - Operation
1 acre						
25	124	356	4	1	3	1
50	128	520	12	3	4	1
100	148	995	77	19	8	2
200	191	1916	142	34	18	5
500	299	6295	207	50	68	17
2 acres						
25	176	553	6	2	4	1
50	176	750	20	5	6	2
100	190	1313	85	21	10	3
200	226	2383	151	36	21	5
500	319	6858	216	52	73	18
5 acres						
25	262	994	13	3	8	2
50	262	1282	42	10	10	3
100	276	2018	108	26	15	4
200	304	3497	173	42	28	7
500	379	8462	239	57	86	21

Notes:

[1] 25 meters = 82 feet
50 meters = 164 feet
100 meters = 328 feet
200 meters = 656 feet
500 meters = 1,640 feet

Source: South Coast Air Quality Management District Final Localized Significance Threshold Methodology (SCAQMD, 2003a) and South Coast Air Quality Management District Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 CEQA Significance Thresholds (SCAQMD, 2006).

4.1.5 Impacts

4.1.5.1 Consistency with Air Quality Plan

The project would comply with applicable federal, State, and local laws. The most recent air quality management plan adopted by the SCAQMD for the SCAB is the 2007 AQMP (SCAQMD, 2007). The control strategies proposed in the 2007 AQMP focus on emissions of $PM_{2.5}$ and ozone precursors, and identify precursor emissions as the key source of $PM_{2.5}$ in the atmosphere, as opposed to directly emitted $PM_{2.5}$.

The proposed project would not conflict with or obstruct implementation of the AQMP, as it would be in compliance with applicable rules and regulations adopted by the SCAQMD for the purpose of attaining and maintaining the air quality standards. The AQMP anticipates construction activities in its emissions budget and assumes that projects would comply with requirements for construction equipment and control of fugitive dust emissions, thereby reducing emissions of $PM_{2.5}$ and ozone precursors to the extent feasible. By virtue of its compliance with applicable rules and regulations, the proposed project would not conflict with or obstruct implementation of the AQMP, and impacts would be less than significant.

For operations, the project would comply with applicable federal, State, and local laws. Operation and maintenance emissions would be less than emissions associated with construction, and would include minor use of off-road equipment and on-road vehicles, essentially the same as under existing conditions. There may be some minor increase in equipment use related to maintenance of landscaped areas, if implemented. The AQMP anticipates off-road equipment and vehicle emissions in its emissions budget and assumes that projects would comply with requirements for equipment and motor vehicles. By virtue of its compliance with applicable rules and regulations, the proposed project would not conflict with or obstruct implementation of the AQMP, and impacts would be less than significant.

4.1.5.2 Violation of an Air Quality Standard

Emissions during project construction activities will result from the operation of heavy equipment (dozers, dump trucks, flatbed trucks, backhoes, tractors, etc.), vehicles (including truck traffic and worker vehicles), and from fugitive dust generated by construction activities. Emissions from heavy equipment used in construction for the project were estimated based on emission factors for the SCAB from CARB's OFFROAD2007 Model (CARB, 2007), as published on the SCAQMD's website. Emission factors for 2013 represent the average fleet emissions throughout the SCAB and were considered representative of construction equipment that would be in use during construction of the project. Emissions from worker travel and truck traffic were calculated using the CARB's EMFAC2011 Model (CARB, 20011) for on-road vehicles. Emissions of fugitive dust were estimated based on SCAQMD and USEPA emission factors.

Table 4.1-7 presents the equipment, truck, and workforce assumptions used in the emission calculations. The construction assumptions are considered worst-case since average soil hauling is assumed to be 15 cubic yards per truck; it is likely that a greater volume of dirt could be moved per trip, resulting in fewer trips. Additionally, four work areas are assumed to be active simultaneously. The assumptions reflect a reasonable description of how construction may occur, but are assumptions only, not specific limitations that will be imposed on the contractor. Actual construction practices, including equipment use, soil hauling truck size, number of active construction areas, etc., will be determined by the contractor. Los Angeles County will oversee construction of the project; however, the County does not specify means and methods in their construction contracts.

Table 4.1-7
Estimated Equipment and Vehicles for Project Construction

Construction Task	Anticipated Equipment	Qty.	Est. HP	Days	Hours / Day
Spreading Basins (per work area; total of 4 work areas operating simultaneously)					
Clear and Grub	Dozer (off hwy tractor)	2	1,000	680	8
	Loader - rubber tired	2	750	680	8
	Excavator	4	750	680	8
	Truck - off highway	4	500	680	8
	Water truck	1	175	680	8
	truck – pickup	1		680	8
Excavation	Dozer	2	1,000	680	8
	Loader	2	750	680	8
	Excavator	1	750	680	8
	Trucks - on highway heavy duty haul trucks	4		680	8
	truck – pickup	2		680	8
Berm Building and Bottom Shaping	dozer (w/scarper board)	1	500	680	8
	Scraper	2	750	680	8
	motor grader	1	500	680	8
General	Streetsweeper	2	120	680	8
Intakes and Overflow (per structure - total of 4 structures) approx. 3 weeks at each location					
Cut & Demo Concrete Slabs & Walls	Air Compressor	1	500	5	8
	Concrete Cutting Truck	1	175	2	8
	Excavator (Breaking conc - hoe-ram attachment)	1	250	5	8
	Loader - rubber tired		250	5	8
	Trucks - on highway heavy duty haul trucks	1		5	4
	Truck – pickup	1		5	
Prep Footings & Slabs	Backhoe - excavator bucket	1	250	2	8
	Backhoe - skip bucket	1	120	2	8
	Roller / Compactor	1	50	1	4
	Delivery Truck	1		1	1
Delivery Wood Forming Materials	Delivery Truck	1		1	1
Deliver & Install Rebar Materials	Delivery Truck	1		1	1
Form Walls	Forklift	1	175	3	4
Pour Concrete	Delivery Mixer – Truck	1	235	2	4
Deliver & Install Trash Screen	Forklift	1	175	2	4
	Delivery Truck	1		1	1
Install RCP Interbasin Conduits (per location, total of 8 locations)					
Deliver RCP & Unload	Delivery Truck	1		1	4
	Forklift	1	175	1	8
Install RCP - Dig, Lay & Backfill	Excavator	1	500	2	8
	Loader - rubber tired	1	250	2	8
	Forklift	1	175	2	8
	Delivery Truck - bedding materials	1		2	4

Table 4.1-8 presents the worst-case, peak day emission estimates for the construction activity. The maximum simultaneous emission estimates are considered truly worst-case since it is unlikely that earthwork would occur in four construction zones simultaneously with intake and conduit construction.

Table 4.1-8
Estimated Maximum Daily Construction Emissions

Source	ROG (lbs/day)	CO (lbs/day)	NO_X (lbs/day)	SO_X (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Spreading Basins						
Heavy Construction Equipment	142.06	520.84	1293.79	1.58	45.93	40.88
Worker Vehicles	0.20	6.22	0.59	0.01	0.11	0.05
Construction Trucks	0.76	3.02	12.63	0.01	0.62	0.44
Fugitive Dust					67.79	23.18
Total Daily	**143.02**	**530.07**	**1307.02**	**1.60**	**114.46**	**64.56**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*
Above Threshold?	Yes	No	Yes	No	No	Yes
Intakes and Overflow						
Heavy Construction Equipment	4.45	16.16	41.14	0.06	1.57	1.40
Worker Vehicles	0.20	6.22	0.59	0.01	0.11	0.05
Construction Trucks	0.23	0.90	3.88	0.00	0.18	0.13
Total Daily	**4.88**	**23.28**	**45.62**	**0.07**	**1.86**	**1.57**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*
Above Threshold?	No	No	No	No	No	No
RCP Interbasin Conduits						
Heavy Construction Equipment	6.95	25.94	59.74	0.09	2.44	2.17
Worker Vehicles	0.20	6.22	0.59	0.01	0.11	0.05
Construction Trucks	0.45	1.80	7.76	0.01	0.36	0.26
Total Daily	**7.61**	**33.96**	**68.09**	**0.10**	**2.91**	**2.48**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*
Above Threshold?	No	No	No	No	No	No
Maximum Simultaneous Emissions						
Total Daily	**155.51**	**587.32**	**1420.73**	**1.76**	**119.22**	**68.60**
Significance Threshold	75	550	100	150	150	55
Above Threshold?	Yes	Yes	Yes	No	No	Yes
Localized Significance Threshold	N/A	1282	262	N/A	13	8
Above Threshold?	N/A	No	Yes	N/A	Yes	Yes

As shown in **Table 4.1-8**, maximum daily emissions would be above the regional significance thresholds for ROG, CO, NO_x, and $PM_{2.5}$. Maximum daily emissions would also be above the LSTs for NOx, PM_{10}, and $PM_{2.5}$. Impacts associated with construction activities would therefore result in significant, but temporary, impacts on air quality.

Dust Reduction Measures. Construction of the project would be subject to SCAQMD Rule 403, Fugitive Dust, which is applicable to any activity capable of generating fugitive dust, including construction. Based on the size of the TSG, the project would qualify as a large operation (50 or more acres of disturbed surface area). Compliance with Rule 403 requires implementation of best available control measures (BACM) to minimize fugitive dust emissions (Tables 1, 2 and 3 of the Rule, included in **Appendix C**). In compliance with this rule, a dust control supervisor shall be identified for the project and shall supervise implementation of the dust control measures. Dust control will focus on vehicle trackout, stabilizing soils, water application, and maintenance of soil moisture content. With implementation of the BACM, approximately 61 to 85 percent reduction in PM_{10} and $PM_{2.5}$ emissions is anticipated (SCAQMD, 1993 as revised 1999). Therefore, with implementation of dust control measures, project-related emissions of dust would be below SCAQMD construction thresholds but would potentially still exceed LSTs for the East San Fernando Valley. Since LSTs would be exceeded even with implementation of feasible mitigation measures, local air quality impacts related to fugitive dust will be significant.

4.1.5.3 Toxic Air Contaminant Impacts

Construction activities would result in emissions of diesel particulate matter from heavy construction equipment used on site and truck traffic to and from the site, as well as minor amounts of TAC emissions from motor vehicles (such as benzene, 1,3-butadiene, toluene, and xylenes). The main TAC associated with the project is diesel particulate matter from truck traffic along the haul routes. Health effects attributable to exposure to diesel particulate matter are long-term effects based on chronic (i.e., long-term) exposure to emissions. Health effects are generally evaluated based on a lifetime (70 years) of exposure.

To evaluate the potential for adverse impacts from TAC emissions, a health risk assessment for the construction period was conducted based on the SCAQMD's *Health Risk Assessment guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling for CEQA Air Quality Analysis* (SCAQMD 2003b). The analysis addressed the potential for carcinogenic impacts associated with inhalation of diesel particulate matter from truck traffic traveling along the haul routes.

The proposed project would generate approximately 174,080 one-way truck trips, either inbound or outbound from the Tujunga Spreading Grounds. Based on the potential disposal sites, four haul routes were evaluated:

- Alternative 1: North on Arleta Avenue, east on Branford Street to the Boulevard Pit; returning south on San Fernando Road, west on Sheldon Street to the Tujunga Spreading Grounds.
- Alternative 2: East/west on Sheldon Street to the Sheldon Pit.

- Alternative 3: East/west on Sheldon Street to the CalMat Disposal Site.
- Alternative 4: East on Sheldon Street, south on Glenoaks Blvd. to the Bradley Landfill, returning on Peoria Street, west on Tuxford Street and Roscoe Blvd. to the Tujunga Spreading Grounds.

Based on the health risk calculations, the potential for carcinogenic impacts associated with inhalation of diesel particulate matter from truck traffic traveling along the haul routes was calculated as 0.73 in a million for Alternative 1, 0.58 in a million for Alternative 2, 0.58 in a million for Alternative 3, and 0.77 in a million for Alternative 4. Based on this analysis, the impacts would not exceed the SCAQMD's 10 in a million risk threshold at any residential or sensitive receptors. Therefore, impacts would be less than significant.

4.1.5.4 Odor Impacts During Construction

Construction of the project would involve the use of heavy equipment, including diesel-powered equipment, which would generate fumes and may create nuisance odors. However, these temporary construction-related odor impacts would be confined to the immediate vicinity of the equipment and would not impact a substantial number of people. Therefore, odor impacts during project construction would be less than significant.

4.1.5.5 Air Pollutant Emissions During Project Operation

Under existing conditions, maintenance workers commute to and from the project site. Periodically, maintenance is conducted - vegetation mowing and removal, and sediment removal from the surface of the basins. Maintenance activities require haul trucks travelling to the project site and then off-site to local disposal locations. Air pollutant emissions related to equipment and vehicle use during project operations will be similar with the project as under existing conditions. A slight increase in traffic to the site may result from installation of the recreational enhancements, from landscape maintenance and public access. However, no new workers are anticipated to be required. Therefore, impacts on air quality during project operation will be less than significant.

4.1.6 Cumulative Impacts

4.1.6.1 Cumulative Impact of Nonattainment Pollutants

Related projects that could contribute to a cumulatively considerable net increase of nonattainment pollutants would be projects in the vicinity of the TSG that are under construction at the same time as the project. The following projects are identified as related projects:

- 12501 Sheldon Street – 63 Multi-family Residential Units
- 8401 Arleta Avenue – Middle School, 1053 students
- 9171 Telfair Avenue – High School, 1620 students
- 13000 Montague Street – Elementary School, 400 students
- 9582 Haddon Avenue – 125 Condominium Units
- 8755 Woodman Avenue – 480 students
- 7934 Lankershim Boulevard – 60,000 square foot Shopping Center

These projects could be under construction at the same time as the TSG Enhancement project. As discussed in Section 4.1.5.2, and shown previously in Table 4.1-8, maximum daily construction emissions would exceed the regional significance thresholds for all criteria pollutants except SO_x, and PM_{10} and maximum daily emissions would also exceed the LSTs for NOx, PM_{10}, and $PM_{2.5}$. These emissions would therefore result in a cumulatively considerable, but temporary, impact on ambient air quality during construction activities.

4.1.6.2 Global Climate Change

According to the California Energy Commission (CEC, 2006), CO_2 (fossil fuel combustion CO_2 and non-fossil fuel combustion CO_2) accounts for approximately 84 percent of statewide GHG emissions, with methane accounting for approximately 6 percent and nitrous oxide accounting for another 7 percent. Other pollutants account for approximately 3 percent of GHG emissions in California. The transportation sector is the single largest category of California's GHG emissions, accounting for 41 percent of emissions statewide. In 2004, California produced 431 MMT of total CO_2-e emissions (not including energy imports).

The main source of GHG emissions associated with the proposed project would be combustion of fossil fuels during construction activities. Emissions of GHG have been calculated using the same approach as emissions for overall construction discussed above. Estimated emissions of GHG related to construction of the project are summarized in **Table 4.1-9**. Emission calculations are provided in **Appendix C**.

The SCAQMD recommends that construction emissions be amortized over a 30-year period to account for the project's contribution to overall GHG emissions. If amortized over a 30-year period, construction would contribute approximately 740 metric tons per year of CO_2-equivalent emissions.

SCAQMD's interim threshold of significance for GHG for industrial projects is 10,000 metric tons CO_2-equivalent emissions per year (adopted December 5, 2008; includes construction emissions amortized over 30 years and added to operational GHG emissions). CARB proposed a threshold of 7,000 metric tons of CO_2-equivalent emissions per year for operational emissions (excluding transportation). Predicted project GHG emissions are less than either of these thresholds.

The total CO_2e emissions associated with amortized construction emissions would remain below the thresholds proposed by the SCAQMD and CARB. Impacts to global climate change would therefore be less than significant.

Table 4.1-9
Estimated Annual GHG Emissions from Construction

Source	**CO_2 metric tons** (total)	**CH_4 metric tons** (total)	**N_2O metric tons** (total)
Spreading Basins	17,773	1.45	13.95
Intakes and Overflow	105	0.01	0.06
RCP Interbasin Conduits	92	0.01	0.05
Total	**17,962**	**1.46**	**14.06**
Total CO_2-Equivalent Construction-related Emissions (metric tons)	**22,189**		
Amortized Construction-related Emissions (metric tons per year)	**740**		

4.1.7 Mitigation Measures

As discussed above, maximum daily air pollutant emissions would be above the regional significance thresholds for all pollutants except SOx and PM_{10} and above the local significance thresholds for NOx, PM_{10} and $PM_{2.5}$. To reduce air quality impacts to the extent possible, the following air emission control measures shall be implemented.

AIR-1 Equipment Maintenance – All equipment shall be properly tuned and maintained in accordance with manufacturer's specifications.

AIR-2 Equipment Efficiency – As feasible, construction equipment will be selected that has low pollutant emissions and high energy efficiency. Factors to consider include model year, alternative fuels (e.g., compressed natural gas, biodiesel, emulsified diesel, methanol, propane, butane, and low sulfur diesel) and lean NOx catalyst.

AIR-3 Equipment Operation – The contractor shall maintain and operate construction equipment to minimize exhaust emissions. During construction, trucks and vehicles will minimize idling when not in use to the extent feasible.

AIR-4 Generator Use – To the extent possible, power will be obtained from power poles (the electrical grid) rather than the use of large generators on site.

AIR-5 Catalytic Converters – Catalytic converters shall be installed on all heavy construction equipment, where feasible.

4.1.8 Impact Significance After Mitigation

Implementation of dust control measures in compliance with SCAQMD Rule 403 will substantially reduce particulate matter emissions during project construction. As mitigated, particulate emissions are predicted to be below regional significant thresholds but potentially (depending on the actual reduction efficiencies achieved for the project) above local significant thresholds. Since a wide-range of dust control measures will be incorporated into the project, additional feasible mitigation measures to further reduce particulate matter have not been identified. [Appendix C includes dust BACM Tables 1, 2, and 3 of Rule 403.]

Implementation of mitigation measures AIR-1 through AIR-5 would reduce air pollutant emissions during project construction. However, emissions reductions that can be achieved with these measures are not quantifiable and are not anticipated to reduce emissions of ROG, CO, and NOx below levels of significance. Use of heavy construction equipment and vehicles is required in order to implement the project. Additional mitigation that could reduce emissions (although not necessarily below levels of significance) would be to mandate specific equipment and vehicles (based on air pollutant emission levels) to be used during construction. For example, restricting the contractor from using older equipment by mandating that, from the start of construction, all off-road diesel-powered construction equipment greater than 50 hp meet USEPA Tier 3 off-road emission standards, and that post January 1, 2015, all off-road diesel-powered construction equipment greater than 50 hp meet USEPA Tier 4 emission standards, was considered. Similarly, mandating the use of alternative fuel vehicles for soil hauling trucks was considered.

However, in order to maintain an open construction contract bidding process, specification of equipment types is considered infeasible. To ensure that contracts can be bid by a range of contractors (large and small), the County does not specify the number or types of vehicles and/or equipment to be used for construction projects. Therefore, there are no feasible mitigation measures that would reduce air quality impacts to below a level of significance. Maximum daily emissions associated with construction for the TSG Enhancement project would remain significant with implementation of feasible mitigation measures. However, construction emissions would not have a long-term air quality impact because these emissions would cease at the completion of construction.

4.1.9 Project Alternatives

4.1.9.1 No Project

Under No Project, enhancements to the TSG would not be implemented and the facility could continue to operate as under existing conditions, or additional low flows from the Tujunga Wash could be diverted in excess of existing conditions, but well below the levels proposed under the project. Maintenance workers would commute to the project site, and periodic basin maintenance could require soil hauling to adjacent landfills or aggregate processing facilities. The air emissions related to these activities would be the same as under existing conditions. The temporary significant emissions of ROG, CO, NOx, and particulate matter associated with the proposed project would not occur.

4.1.9.2 Soil Disposal Alternatives

For conservative analysis purposes, a travel distance of 2 miles per one-way trip was included in the construction evaluation; therefore, the emission calculations cover a worst-case scenario for the alternatives. Four alternatives are considered for soil disposal locations:

- Alternative 1 – Boulevard Pit Disposal Site
- Alternative 2 – Sheldon Pit Disposal Site
- Alternative 3 – Cal Mat Disposal Site
- Alternative 4 – Bradley Landfill and Recycling Center Disposal Site
- Alternative 5 – Combination of Soil Disposal Locations

All of the disposal sites are near the project. The Boulevard Pit Disposal Site is located closest to the TSG, directly northeast of the site. This alternative would require the least amount of truck travel.

Alternatives 2, 3 and 4 are along Sheldon Street northeast of the project site. Travel to these alternatives would require the longest truck travel distance. Emissions would be slightly higher for Alternatives 2, 3, and 4 than for Alternative 1, which involves the shortest travel distance. The difference in travel distances would not affect the conclusions of the analysis, and emissions during construction would remain temporarily significant.

4.2 NOISE

Based on the information presented in the Initial Study for the project (**Appendix A**), LADWP determined that the project would not have significant impacts related to exposure of people or generation of excessive groundborne vibration or groundborne noise levels. The Initial Study also documented that no impacts would result from the project regarding airport land use plan areas or exposure of people to excessive airport-related noise. Other potential impacts on noise from implementation of the proposed project are described below. In order to address potential impacts, a detailed Noise Impact Analysis was conducted and focused on construction of the proposed TSG improvements (VSA n Associates, 2012, **Appendix D**).

4.2.1 Resource Overview

Sound is a pressure wave transmitted through the air. Sound is described in terms of loudness or amplitude (measured in decibels), frequency or pitch (measured in Hertz [Hz] or cycles per second), and duration (measured in seconds or minutes). The standard unit of measurement of the loudness of sound is the decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, a special frequency dependent rating scale is usually used to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Noise is defined as unwanted sound; known adverse effects on people include hearing loss, speech and sleep interference, physiological responses, and annoyance. The federal government, the State of California, and many local governments have therefore established noise criteria to protect public health and safety and to prevent disruption of certain human activities.

Noise may be generated from a point source, such as a piece of construction equipment, or from a line source, such as a road containing moving vehicles. Because noise spreads in an ever-widening pattern, the given amount of noise striking an object, such as an eardrum, is reduced with distance from the source. This is known as “spreading loss.” The typical spreading loss for point source noise is 6 dBA per doubling of the distance from the noise source.

Objects that block the line-of-sight attenuate the noise if the receptor is located within the “shadow” of the blockage (such as behind a sound wall). If a receptor is located on the far side of the wall but has a view of the source, however, the wall does little to reduce the noise. A receptor located on the same side of the wall as the noise source may experience an increase in the perceived noise level, as the wall may reflect noise back to the receptor.

Several rating scales (or noise “metrics”) exist to analyze adverse effects of noise, including traffic-generated noise, on a community. These scales include the equivalent noise level (Leq), the Community Noise Equivalent Level (CNEL), and the day/night noise level (Ldn). Leq is a measurement of the sound energy level averaged over a specified time period. Leq represents the amount of variable sound energy received by a receptor over a time interval in a single numerical value.

Unlike the Leq metric, the CNEL noise metric is based on 24 hours of measurement. CNEL also differs from Leq in that it applies a time-weighted factor designed to emphasize noise events that occur during the evening and nighttime hours when quiet time and sleep disturbance are of particular concern. Noise occurring during the daytime period (7:00 AM to 7:00 PM) receives no penalty. Noise produced during the evening time period (7:00 PM to 10:00 PM) is penalized by 5 dBA, while nighttime noise (10:00 PM to 7:00 AM) is penalized by 10 dBA. The Ldn noise metric is similar to the CNEL metric except that the period from 7:00 PM to 10:00 PM receives no penalty. Both the CNEL and Ldn metrics yield approximately the same 24-hour value (within about 0.5 dBA) with the CNEL being the more restrictive (i.e., higher).

4.2.2 Environmental Setting

4.2.2.1 TSG Project Vicinity

The TSG site is located adjacent to the Sheldon-Arleta Landfill in the City of Los Angeles, and is generally bounded by Laurel Canyon Boulevard to the east, Roscoe Boulevard to the south, Canterbury Avenue to the west and the Tujunga Wash channel to the north. The TSG property is fenced; no masonry (or other) walls are installed around the facility. Existing noise sources in the project vicinity include the I-5 Freeway and SR-170 which intersect over the project site. The closest sensitive noise receptors to the TSG are residences (south, west, and northeast of the site) and two schools. Richard E. Byrd Middle School is located across SR-170 from the TSG, east of existing basins Q, R, S and T. The middle school building closest to the TSG is approximately 700 feet east of existing Basin S. Polytechnic High School is located further east, off Arleta Avenue. The high school building closest to the TSG is approximately 1,700 feet east of existing Basin S. Residences to the northwest are separated from the TSG by the Tujunga Wash Channel; a minimum of approximately 200 feet separates residences from the spreading basins. The closest residences are at the south end of the TSG; residences on Canterbury Avenue are within approximately 50 feet of existing Basin A. Residences on Sheldon Street are also directly across the street from the TSG, approximately 60 feet from existing Basin P.

4.2.2.2 Noise Field Survey

To ascertain the existing noise levels adjacent to the project site, field monitoring was conducted on February 26th and April 3rd, 2012. Noise readings were taken at 11 locations around the TSG to reflect the different residential areas surrounding the project site (**Figure 4.2-1**). Noise readings (20 minute Leq) are presented in **Table 4.2-1**. One minute Leq data are presented in **Appendix D**. Based on the field survey measurements, existing noise levels in the neighborhoods surrounding the TSG are above the presumed ambient of 50 dBA daytime (7:00 AM to 10:00 PM) for residential land uses (LAMC, Section 111.03). Measured Leq (20 minutes) ranged from 50 to 73 dBA.

Document: NoiseLocations.mxd

Date: April 2, 2012

Noise Measurement Locations

MWH.

Figure 4.2-1

Table 4.2-1
Noise Measurements in the TSG Project Vicinity

Monitoring Location Number	**Location Description**	**20 Minute Leq** (dBA)	
		2/26/12	**4/3/12**
1	North corner of Tonopah Street /Canterbury Avenue	52	64
2	Tonopah Street past Roslyndale Avenue, 5th house	51	53
3	Side Middle of Reservoir	54	54
4	North Corner Tonopah Street / Lev Avenue	60	61
5	South Corner Tonopah Street and Vena Avenue	56	57
6	North Corner Tonopah Street / Morehart Avenue	61	61
7	North Corner Sheldon Street / Cranford Avenue	69	73
8	8846 Cranford Avenue	59	55
9	End of cul-de-sac – Teesdale Avenue	60	62
10	End of cul-de-sac – Morse Avenue	57	54
11	North Corner Millrace Street and Canterbury Avenue	50	52

Source: VSA n Associates, 2012. Measurements taken February 26, 2012 and April 3, 2012.
Leq = equivalent noise level

4.2.3 Significance Criteria

The proposed project would have a significant impact on noise if it (State CEQA Guidelines, Appendix G):

- Exposed people to or generated noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Created a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- Created a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Additionally, the City of Los Angeles Municipal Code (LAMC) addresses construction noise and operational noise from pumping equipment.

Construction Noise – Per LAMC Section 41.40, no construction, repair, or excavation work shall be performed (without a Police Commission permit) between the hours of 9:00 PM and 7:00 AM of the following day on any weekday, or within 500 feet of residential areas before 8:00 AM or after 6:00 PM on any Saturday or national holiday, or at any time on any Sunday.

Per LAMC Section 112.05, between the hours of 7:00 AM and 10:00 PM, in any residential zone of the City or within 500 feet thereof, no person shall operate or cause to be operated any powered equipment or powered hand tool that produces a maximum noise level exceeding the following noise limits at a distance of 50 feet therefrom:

(a) 75dB(A) for construction, industrial, and agricultural machinery including crawler-tractors, dozers, rotary drills and augers, loaders, power shovels, cranes, derricks, motor graders, paving machines, off-highway trucks, ditchers, trenchers, compactors, scrapers, wagons, pavement breakers, compressors and pneumatic or other powered equipment. Noise limitations shall not apply where compliance therewith is technically infeasible. Technical infeasibility shall mean that said noise limitations cannot be complied with despite the use of mufflers, shields, sound barriers and/or other noise reduction device or techniques during the operation of the equipment.

Operations Noise - Per LAMC Section 112.02:

(a) It shall be unlawful for any person, within any zone of the city to operate any air conditioning, refrigeration or heating equipment for any residence or other structure or to operate any pumping, filtering or heating equipment for any pool or reservoir in such manner as to create any noise which would cause the noise level on the premises of any other occupied property or if a condominium, apartment house, duplex, or attached business, within any adjoining unit to exceed the ambient noise level by more than five (5) decibels.

Transportation-Related Noise – Noise levels increase approximately 3 dBA for each doubling of roadway traffic volume, assuming that the speed and fleet mix remain constant. Therefore, mobile noise impacts can be considered potentially significant for projects that double existing traffic. Although this threshold is generally defined for project operation, it will be used to assess the construction traffic associated with the proposed project due to the anticipated length of project soil disposal activities.

4.2.4 Impacts

The generation of noise associated with the implementation of the proposed project would occur in the short-term from construction activities, including the disposal of excess soil to local disposal site(s), and from operation of project pumping equipment.

4.2.4.1 Noise Impacts during Construction

Reconfiguration of the spreading basins and installation of the intake and conveyance features will require the use of heavy equipment including dozers, loaders, excavators, motor graders, and soil hauling trucks. The specific equipment to be used (size, type and number) will be determined by the contractor. In general, construction activity during ground clearing, grading and excavation can generate noise levels of 84 to 89 dBA Leq at 50 feet (**Table 4.2-2**).

Table 4.2-2
Typical Outdoor Construction Noise Levels

Construction Phase	Noise Level (dBA Leq)	
	at 50 feet	at 50 feet with mufflers
Ground Clearing	84	82
Excavation, Grading	89	86
Foundations	78	77
Structural	85	83
Finishing	89	86

Source: EPA, 1971.

Construction activity for the TSG enhancements will occur over most of the 160-acre site, and at multiple locations concurrently. Actual construction noise levels at and near the site would fluctuate depending on the specific type, number, and duration of use of various pieces of equipment. The maximum noise level would not be continuous, nor would it be typical of noise levels throughout the construction period since equipment will not operate continuously at full power and will move throughout the work area. However, construction of Basin O and Basin 8 will occur within 50 to 60 feet of residences; areas with ambient noise levels of approximately 54 to 73 dBA. Other residences are within approximately 200 feet of the spreading basins and could periodically experience noise levels on the order of 77 dBA. Although the impact would be temporary, excavation and grading could result in noise levels of 84 to 89 dBA Leq at adjacent residences near existing Basin A (future Basin O) on Canterbury Avenue and near existing Basin P (future Basin 8) on Sheldon Street, a substantial increase over ambient noise levels and over the 75 dBA (at 50 feet) noise limit for powered equipment. Therefore, the impact of noise generated at the TSG during project construction will be significant.

Construction of the project will require soil disposal via haul trucks to adjacent landfill or aggregate mining facilities. The general vicinity of the project site is densely residential, however the presence of aggregate mining and landfill operations increases the percentage of heavy trucks on area roadways. As presented in **Section 4.3** (and **Appendix E**) of this EIR, soil disposal is assumed to generate approximately 136 passenger car equivalent (PCE) trips during both the AM and PM peak hours with 104 inbound and 32 outbound trips during the AM peak hour and 32 inbound and 104 outbound trips during the PM peak hour. Since this represents substantially less than a doubling of traffic, the impact of noise generated from additional traffic during construction will be less than significant.

4.2.4.2 Noise Impacts during Operation

Under the project, a portable sump pump may be used to drain Basin O and Basin 8, and two electric-powered pumps will power the rubber dams to direct flows in Tujunga and Pacoima Diversion Washes. This equipment will operate infrequently, and is similar to existing equipment currently used at the TSG. Since addition of this equipment will result in a noise increase of less than 1 dBA, operation of the project will be in compliance with LAMC Section 112.02 which defines noise increases of 5 dB from pumping equipment as significant.

Operation of the TSG currently requires periodic vegetation and basin maintenance, including vehicle trips to nearby soil disposal locations. Operations traffic under the proposed project will be similar to existing conditions; a minor increase in maintenance would result from installation of the recreation enhancements. However, the additional vehicle trips necessary for landscape maintenance will be minor, and therefore, the impact from permanent noise increases related to traffic for project operation will be less than significant.

Since project operation will be in compliance with applicable City of Los Angeles noise standards, noise impacts from project operation will be less than significant.

4.2.5 Mitigation Measures

As discussed above, noise generated during project construction would result in a substantial increase over ambient noise levels and exceed LAMC Section 112.05 limits for heavy construction equipment. To reduce noise impacts to less than significant levels, noise control measures N-1 through N-3 shall be implemented.

N-1 Construction Hours - Construction shall be limited to:

- Weekdays: 7:00 AM to 9:00 PM
- Saturdays: 8:00 AM to 6:00 PM
- No construction shall occur on Sundays or national holidays.

N-2 Mufflers - Construction equipment, fixed and mobile, shall be equipped with properly operating and maintained noise mufflers and intake silencers, consistent with manufacturers' standards. Each piece of equipment will be individually inspected to ensure proper operation of the muffler and silencer equipment.

N-3 Noise Control Plan - A Noise Control Plan shall be prepared prior to the start of construction, and implemented during the entire construction period. The Plan shall:

- Predict noise levels during construction activity based on the specific construction equipment to be used at the site. If equipment noise levels are not available, these shall be measured in the field.

- Identify areas of the construction site where noise control is required to meet noise ordinance standards. For these areas, identify the additional measures, which may include: specialized mufflers or silencers, directional exhaust pipes, damping and sound absorptive material, and/or acoustical barriers. Where relevant, the size, number and location of portable acoustical barriers and/or noise control curtains to be used during construction will be detailed. The height and length of the barriers shall be determined based on the location of the construction activity, specific construction equipment to be used (type and number) and distance to the receptors.

- Predict noise levels during construction activity with use of specialized mufflers or silencers, directional exhaust pipes, damping and sound absorptive material, and/or acoustical barriers, as relevant.

- Document the reduction in construction noise via monitoring. Noise monitoring shall be conducted a minimum of 1 day per week when construction is within 400 feet of a residence.

4.2.6 Impact Significance After Mitigation

In addition to equipment mufflers and silencers, the primary means of noise reduction from construction activity will be through the site specific installation of noise control barriers and/or curtains. Generally, the surface of the sound barriers would present a solid face from top to bottom without any openings or cutouts. If sound curtains are used, they could be constructed of sectional steel frames with acoustic material fastened to the steel framework. Sections can be attached or unattached as needed to adjust the length of the curtain. If barrier walls are used, they are generally double-walled to maximize noise reduction. Due to the nature of the work, especially the grading and excavation activities over large areas, it may be technically infeasible to place barriers such that they reduce equipment noise levels to less than 75 dBA at a distance of 50 feet (per LACM Section 112.05). However, barriers will be placed as to best protect adjacent residential receptors, therefore, project activities would not be in violation of the municipal code. LAMC Section 112.05 states that, "Technical infeasibility shall mean that said noise limitations cannot be complied with despite the use of mufflers, shields, sound barriers and/or other noise reduction device or techniques during the operation of the equipment." With implementation of noise reduction devices, noise levels may be reduced up to approximately 29 dBA (approximately 3 to 6 dBA reduction for specialized mufflers, approximately 3 to 6 dbA reduction for directional exhaust pipes, approximately 5 dbA for damping and sound absorptive material, and approximately 12 dBA reduction for sound barriers). With implementation of noise reduction measures, noise levels during project construction will be consistent with the City noise code. Therefore, noise impacts will be less than significant with implementation of mitigation.

4.2.7 Cumulative Impacts with Related Projects

Related projects that could contribute to a cumulatively considerable noise increase would be projects in the vicinity of the TSG that are under construction at the same time as the project. The following projects are identified as related projects:

- 12501 Sheldon Street – 63 Multi-family Residential Units
- 8401 Arleta Avenue – Middle School, 1053 students
- 9171 Telfair Avenue – High School, 1620 students
- 13000 Montague Street – Elementary School, 400 students
- 9582 Haddon Avenue – 125 Condominium Units
- 8755 Woodman Avenue – 480 students
- 7934 Lankershim Boulevard – 60,000 square foot Shopping Center

These projects could be under construction at the same time as the TSG Enhancement project. As shown on **Figure 3-3**, with one exception, related projects are located more than 0.34 miles from the TSG project site. At this distance, noise from construction of the TSG improvements would not be additive with construction noise from these residential, school, and shopping center projects. The proposed 63-unit residential project proposed for 12501 Sheldon Street would be adjacent to construction of Basin 8 at the TSG. It is unknown if project construction schedules would overlap, but it is assumed that construction of the residential project would be conducted in compliance with applicable noise ordinances. Since equipment mufflers and/or silencers, and other noise reduction measures such as sound barriers will be used to reduce project-related noise generation, the combined noise impact of the proposed project and the related projects is less than cumulatively considerable.

4.2.8 Project Alternatives

4.2.8.1 No Project

Under No Project, enhancements to the TSG would not be implemented and the facility would continue to operate as under existing conditions. Noise related to project construction would not be generated. Minor noise related to maintenance workers commuting to the site, periodic basin maintenance, and infrequent disposal of vegetation and excess soils would continue to be generated as under existing conditions.

4.2.8.2 Soil Disposal Alternatives

Four alternatives, and one combination alternative, are considered for soil disposal locations:

- Alternative 1 – Boulevard Pit Disposal Site
- Alternative 2 – Sheldon Pit Disposal Site
- Alternative 3 – Cal Mat Disposal Site
- Alternative 4 – Bradley Landfill and Recycling Center Disposal Site
- Alternative 5 – Combination of Soil Disposal Alternatives

Since the project alternatives are focused on soil disposal locations only, all alternatives would generate the same noise levels during project construction at the TSG site, and therefore the impact on adjacent residential receptors would be the same under each alternative. With mitigation, noise impacts under any of the alternatives will be less than significant.

As described above, noise related to hauling trucks for soil disposal from the site will be less than significant. However, the Boulevard Pit Disposal Site is located closest (directly northeast) to the TSG. This alternative would require the least amount of truck travel and therefore it would generate the least amount of mobile noise.

Section 4.3
Transportation and Traffic

4.3 TRANSPORTATION AND TRAFFIC

Based on the information presented in the Initial Study for the project (**Appendix A**), LADWP determined that the project would not have significant impacts related to change in air traffic patterns or adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities. Other potential impacts to transportation and traffic from implementation of the proposed project are described below. Additionally, a comment letter on the NOP received from Caltrans requested information regarding construction traffic for the project (**Appendix B**). In order to address potential impacts, a detailed Traffic Impact Analysis was conducted and focused on construction of the proposed TSG improvements (Fehr&Peers, 2012, **Appendix E**).

4.3.1 Regulatory Framework

4.3.1.1 City of Los Angeles Department of Transportation

Formed by ordinance on February 25, 1979, the City of Los Angeles Department of Transportation (LADOT) conducts long-term planning for the City's transportation needs. Relevant to the proposed project, the City allows major and secondary arterials to be used as truck routes. The City's policy is to allow trucks to travel in a "reasonable fashion" to and from a work site, including over collector and local streets. Potential haul routes for the project include segments of Branford Street, Sheldon Street, Roscoe Boulevard, Tuxford Street, Glenoaks Boulevard, San Fernando Road, Laurel Canyon Boulevard, and Arleta Avenue. While the City of Los Angeles Municipal Code (LAMC) prohibits the use of certain segments of specific streets by vehicles over 6,000 gross weight (LAMC Section 80.36.1), none of recommended truck routes use these segments, nor any local or collector roads. All roadways assumed for use as haul routes are classified by the City of Los Angeles as Secondary roadways or Major Highways. LADOT will review the haul-route for the proposed project.

4.3.1.2 Metropolitan Transit Authority

Los Angeles County Metropolitan Transportation Authority (Metro, LACMTA) is the Congestion Management Agency for Los Angeles County. Metro is responsible for transportation planning, design, construction, and operation of transportation systems. The Congestion Management Program (CMP) was enacted by the California State Legislature with the passage of AB 471 in July, 1989 (California Government Code Section 65088, et seq.). The requirements for the Congestion Management Program became effective upon voter approval of Proposition 111 in June 1990. The Los Angeles County Transportation Commission (which was merged into the LACMTA) first adopted a Countywide CMP in December 1992. LACMTA prepares and periodically updates the city's CMP to meet federal Congestion Management System guidelines as well as state CMP legislation. The current CMP was drafted in 2010 (LACMTA, 2010) to link local land use decisions with their impacts on regional transportation, and air quality; and to develop a partnership among transportation decision makers on devising appropriate transportation solutions that include all modes of travel.

Federal law mandates the preparation of a Regional Transportation Plan (RTP) for metropolitan areas. The Southern California Association of Governments (SCAG) is responsible for preparation of the RTP, as the designated metropolitan planning organization (MPO) and the regional transportation planning agency for the metropolitan area including Los Angeles, Orange, San Bernardino, Ventura, Riverside and Imperial counties. CMP statute requires the CMP to be developed consistent with and incorporated into the RTP.

4.3.1.3 California Department of Transportation

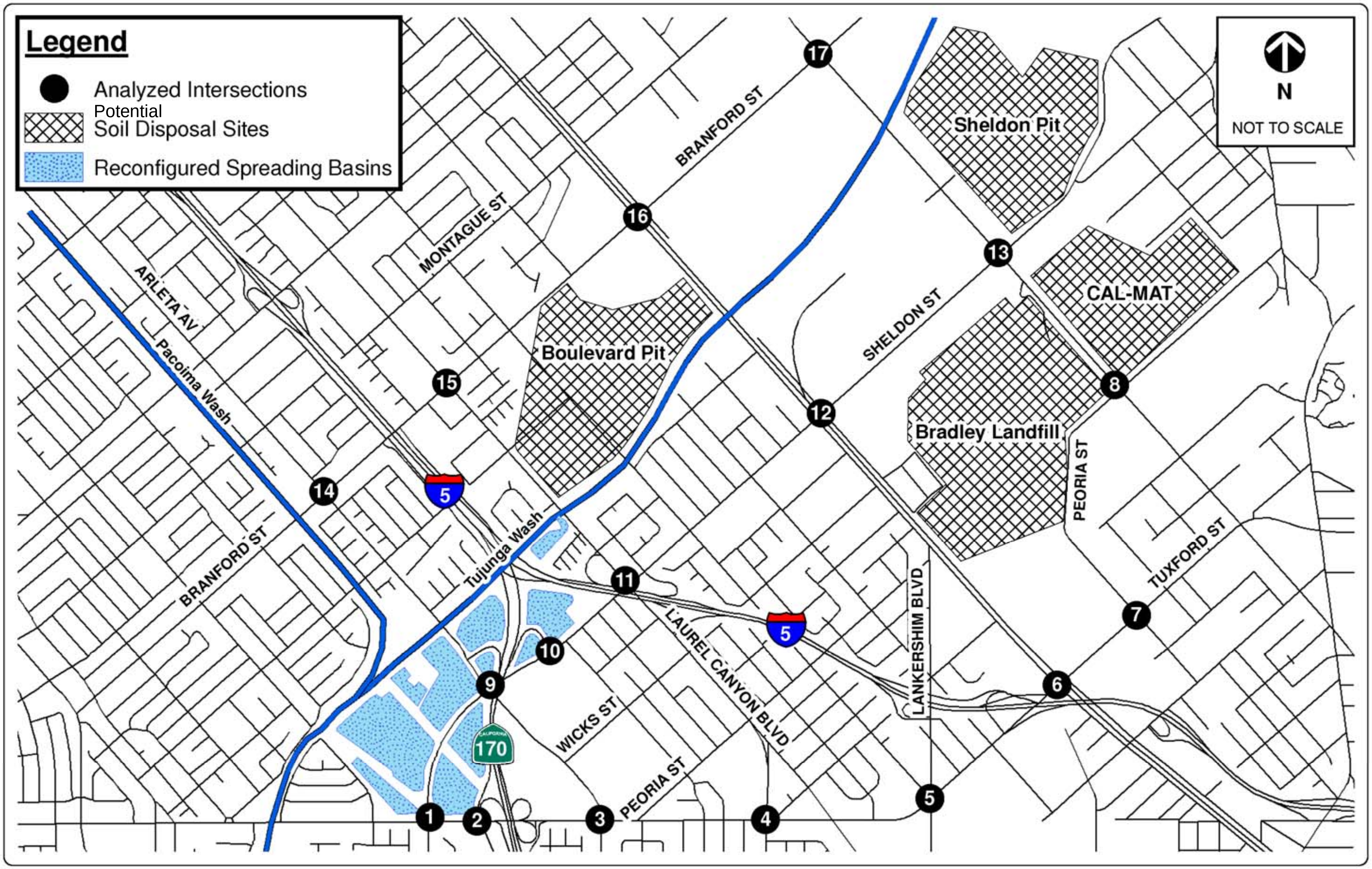
The California Department of Transportation (Caltrans) manages more than 50,000 miles of California's highway and freeway lanes, provides inter-city rail services, permits more than 400 public-use airports and special-use hospital heliports, and works with local agencies. Caltrans carries out its mission of improving mobility across California with six primary programs: Aeronautics, Highway Transportation, Mass Transportation, Transportation Planning, Administration and the Equipment Service Center. State routes in the vicinity of the project site are the Golden State Freeway (I-5) and the Hollywood Freeway (SR-170).

4.3.2 Environmental Setting

The project site is located adjacent to the Sheldon-Arleta Landfill in the City of Los Angeles, and is generally bounded by Laurel Canyon Boulevard to the east, Roscoe Boulevard to the south, Canterbury Avenue to the west and the Tujunga Wash channel to the north. Primary regional access to the project site is provided by the I-5 and SR-170. I-5 runs in the north/south direction just east of the project site; SR 170 runs in the north/south direction through the project site before ending at the I-5 near the project site. The characteristics of the existing street system (number of lanes, speed limit, parking restrictions, etc.) can be found in Table 1 of **Appendix E**.

4.3.2.1 Existing Conditions of Area Roadways

The traffic analysis considered existing (2011) weekday AM and PM peak hour traffic conditions for 17 relevant study intersections (**Figure 4.3-1**). Existing traffic volumes were collected at these locations in June 2011, during both the morning and afternoon peak periods (7:00 AM to 10:00 AM and 3:00 PM to 6:00 PM). The general vicinity of the project site is densely residential, however the presence of aggregate mining and landfill operations increases the percentage of heavy truck volumes on area roadways. Therefore, vehicle classifications were noted during the traffic counts and passage-car equivalents (PCE) calculated (one heavy truck equals two PCE).



Source: Fehr & Peers, 2012

Document: Fig4.3-1Intersections.pub

Date: March 26, 2012

Study Area and Analyzed Intersections

Figure 4.3-1

In accordance with LADOT procedures, the "Critical Movement Analysis-Planning" (Transportation Research Board, 1980) method of intersection capacity analysis was used to determine the intersection volume-to-capacity (V/C) ratio and corresponding level of service (LOS) for the turning movements and intersection characteristics at the 17 signalized study intersections. LOS is a qualitative indicator of an intersection's operating conditions that is used to represent various degrees of congestion and delay. It is measured from LOS A (excellent conditions) to LOS F (extreme congestion), with LOS A through D typically considered to be acceptable (**Table 4.3-1**). The LOS is based on the ratio of the actual volume of traffic passing through the intersection to the overall capacity of the intersection. Calculation of V/C ratios for the 17 intersections near the project site followed standard LADOT procedures and included consideration of the existing Automated Surveillance and Control (ATSAC) system.

All of the 17 analyzed intersections are currently operating at acceptable levels of service, with none operating at LOS E or F during any of the peak hours (**Table 4.3-2**). Detailed LOS calculations are provided in **Appendix E**.

Table 4.3-1
Level of Service Definitions for Signalized Intersections

Level of Service	Volume/Capacity Ratio	Definition
A	0.000 - 0.600	**EXCELLENT** - No vehicle waits longer than one red light and no approach phase is fully used.
B	>0.600 - 0.700	**VERY GOOD** - An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	>0.700 - 0.800	**GOOD** - Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	>0.800 - 0.900	**FAIR** - Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	>0.900 - 1.000	**POOR** - Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 1.000	**FAILURE** - Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.

Source: Traffic Study Policies and Procedures, City of Los Angeles Department of Transportation, August 2011.

Table 4.3-2
Existing (2011) Intersection Level of Service

Intersection	Peak Hour	Existing	
		V/C or Delay	LOS
Sheldon Street & Roscoe Boulevard	AM PM	0.747 0.751	C C
State Highway 170 (SR 170) Southbound Off-Ramp & Roscoe Boulevard	AM PM	0.497 0.394	A A
Arleta Avenue & Roscoe Boulevard	AM PM	0.677 0.622	B B
Laurel Canyon Boulevard & Roscoe Boulevard	AM PM	0.653 0.626	B B
Lankershim Boulevard & Roscoe Boulevard	AM PM	0.608 0.648	B B
San Fernando Road & Tuxford Street	AM PM	0.604 0.627	B B
Bradley Avenue & Tuxford Street	AM PM	0.328 0.361	A A
Glenoaks Boulevard & Peoria Street	AM PM	0.349 0.368	A A
Arleta Avenue & Sheldon Street	AM PM	0.659 0.774	B C
State Highway 170 (SR 170) Northbound Off-Ramp & Sheldon Street	AM PM	0.294 0.310	A A
Laurel Canyon Boulevard & Sheldon Street	AM PM	0.666 0.653	B B
San Fernando Road & Sheldon Street	AM PM	0.579 0.652	A B
Glenoaks Boulevard & Sheldon Street	AM PM	0.595 0.571	A A
Arleta Avenue & Branford Street	AM PM	0.631 0.685	B B
Laurel Canyon Boulevard & Branford Street	AM PM	0.613 0.685	B B
San Fernando Road and Branford Street	AM PM	0.530 0.571	A A
Glenoaks Boulevard & Branford Street	AM PM	0.489 0.509	A A

Source: Fehr&Peers, 2012.

4.3.3 Significance Criteria

Based on State CEQA Guidelines, Appendix G, the proposed project would have a significant impact on transportation if it:

- Conflicted with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit

- Conflicted with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways

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

- Resulted in inadequate emergency access

Additionally, LADOT has established maximum allowable increases in traffic from project operations. A sliding scale has been established under which the maximum allowable increase in the V/C ratio decreases as the V/C ratio increases (**Table 4.3-3**). Although these criteria are intended to identify potential traffic impacts during project operation, they can also be applied to construction periods. However, LADOT considers construction impacts as adverse but not significant since, while they introduce inconvenience for vehicular traffic, the impacts are only temporary. Where determinations of adverse impacts are made, motorists would experience inconveniences that range in intensity from slight to substantial. A temporary adverse impact would occur if the project would increase the V/C ratio of applicable intersections beyond the limits established by LADOT.

Table 4.3-3
LADOT Significance Criteria for Project Operations

Intersection Conditions with Project Traffic		Project-Related Increase in V/C Ratio
LOS	V/C Ratio	
C	0.701 - 0.800	Equal to or greater than 0.040
D	0.801 - 0.900	Equal to or greater than 0.020
E, F	> 0.901	Equal to or greater than 0.010

LOS – level of service; V/C – volume-to-capacity ratio

Using these criteria, a project would not have a temporary adverse impact at an analyzed intersection if it were operating at LOS A or B after the addition of project operational traffic. Also, a project would not have a temporary adverse impact on an analyzed intersection if it were operating at LOS C and the incremental change in the V/C ratio were less than 0.04, or if it were operating at LOS D and the incremental change in the V/C ratio were less than 0.02. If the intersection were operating at LOS E or F after the addition of project operational traffic and the incremental change in the V/C ratio were greater than or equal to 0.01, a project would be considered to have a temporary adverse impact.

4.3.4 Impacts

4.3.4.1 Transportation Impacts During Construction

Construction of the proposed project includes deepening and reconfiguring existing spreading basins which will generate excess soil requiring disposal. Increases in traffic in the project area will result from construction workers commuting to the site and soil hauling trucks traveling from the site to the soil disposal area. The following assumptions reflect a reasonable description of how construction may occur, but are assumptions only, not specific limitations that will be imposed on the contractor. Actual construction practices, including equipment use, soil hauling truck size, number of active construction areas, etc., will be determined by the contractor. Assumptions for project construction are:

- 40 construction personnel commuting to the site daily via both local and regional roadways; all arriving during the AM peak hour and departing during the PM peak hour
- 25 percent of workers from the north via the I-5, 25 percent from the south via the SR 170, 25 percent from the east via the I-5, and 25 percent from the west via city streets (Roscoe Boulevard)
- Approximately 1.3 million cubic yards of soil generated, requiring off-site disposal
- Four work areas with concurrent construction activity
- Four soil hauling trucks per work area
- Approximately eight loads of soil per day per truck, resulting in 16 trips per day per truck from the TSG to a soil disposal location via local roadways (truck routes do not travel along freeway facilities)
- Construction of the project to occur between 2012 and 2015

Based on these assumptions, the proposed project would generate approximately 136 PCE trips during both the AM and PM peak hours with 104 inbound and 32 outbound trips during the AM peak hour and 32 inbound and 104 outbound trips during the PM peak hour.

Potential traffic impacts for the project were evaluated during the peak hours of the typical weekday morning (7:00 to 10:00 AM) and afternoon (3:00 to 6:00 PM). The following traffic scenarios were analyzed:

- Existing plus Project (Year 2011) Conditions – This analysis identified the temporary impacts of the proposed project on the existing traffic conditions by adding the construction-related traffic expected to be generated by the project to the existing traffic volumes.

- Cumulative Base (Year 2015) Conditions – This scenario projected the future traffic growth and intersection operating conditions that could be expected from regional growth and known projects planned for the vicinity of the project site by year 2015 (related projects). These analyses provide the cumulative baseline conditions against which project impacts were evaluated. Regional growth is assumed to be 2 percent per year, consistent with other studies conducted in this area of the City. Related projects, identified by LADOT in July 2011, include a 62 unit multi-family residential building, four school projects, a 125 unit condominium building, and a 60,000 square-foot shopping center. The related projects were estimated to result in a total of 1,919 AM trips and 1,074 PM trips (Table 5 of **Appendix E**).

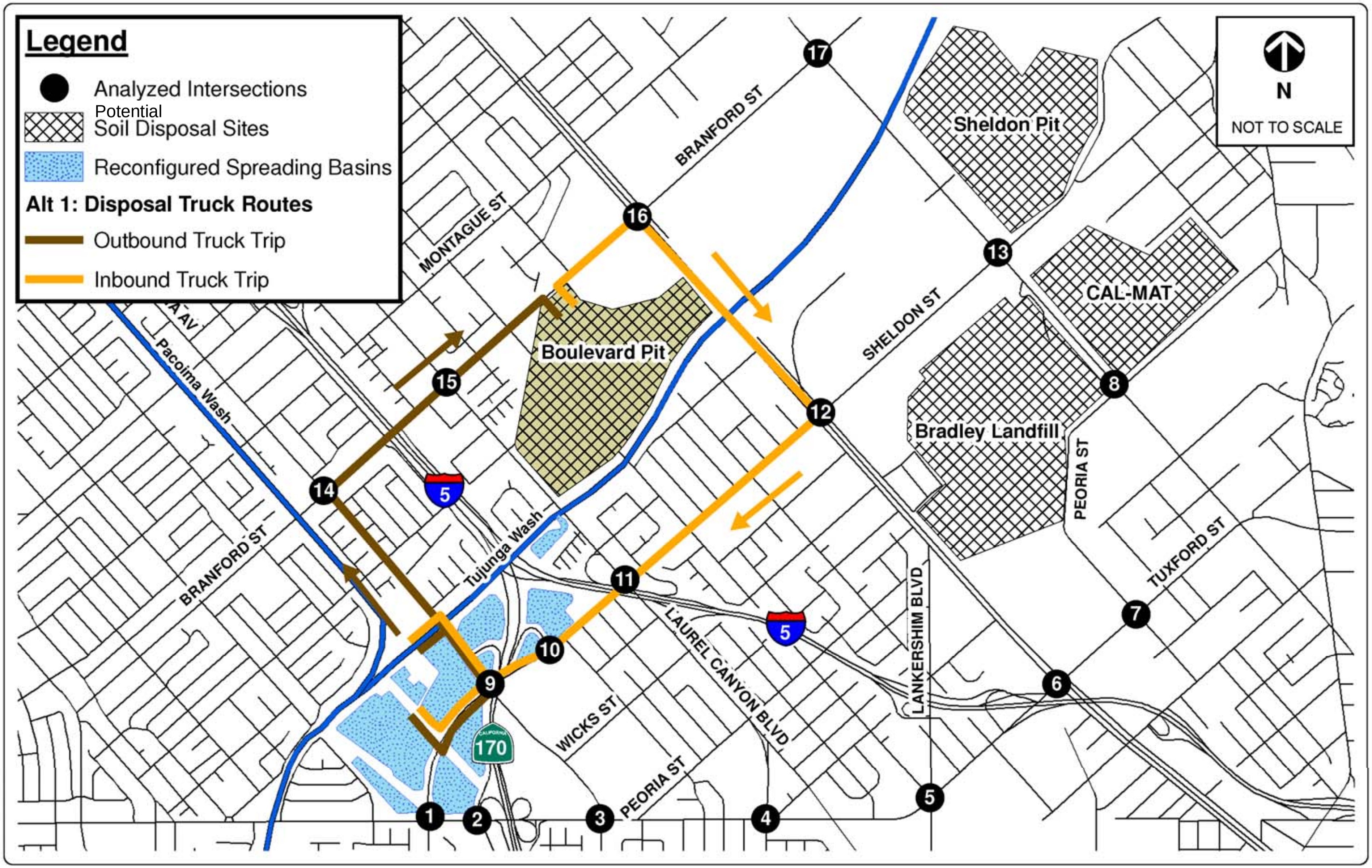
- Cumulative plus Project (Year 2015) Conditions – This analysis identified the temporary incremental impacts of the proposed project on future traffic operating conditions by adding the construction-related traffic expected to be generated by the project to the cumulative base traffic forecasts.

Existing (2011) Plus Project Traffic Impacts. The existing plus project peak hour traffic volumes developed for each alternative were analyzed to project future operating conditions at the 17 study intersections and to identify specific traffic impacts resulting from the addition of project-generated traffic during soil excavation. Future LOS calculations include the additional project-generated trips that would be necessary during the excavation period (see Tables 6 through 9 of **Appendix E**).

LADWP intends to dispose of soils generated by the project at the closest disposal site where the material can be used – Boulevard Pit immediately adjacent to the TSG. However, since disposal at this location has not been confirmed, four alternatives were analyzed:

- Alternative 1: Boulevard Pit Disposal Site - Trucks will travel to Boulevard Pit by heading northbound on Arleta Avenue and will turn right onto Branford Street (**Figure 4.3-2**). Trucks will then make a right turn from Branford Street to enter the Boulevard Pit, and will use the same driveway to exit the pit. Trucks will return to the TSG by making a right turn out of the Boulevard Pit and heading eastbound on Branford Street. Trucks will then make a right turn onto San Fernando Road, followed by a right turn onto Sheldon Street to the TSG.

- Alternative 2: Sheldon Pit Disposal Site - Trucks will travel to Sheldon Pit by heading eastbound on Sheldon Street (**Figure 4.3-3**). Trucks will make a left turn from Sheldon Street to enter the Sheldon Pit, and will use the same driveway to exit the pit. Trucks will return to the TSG by traveling westbound on Sheldon Street.



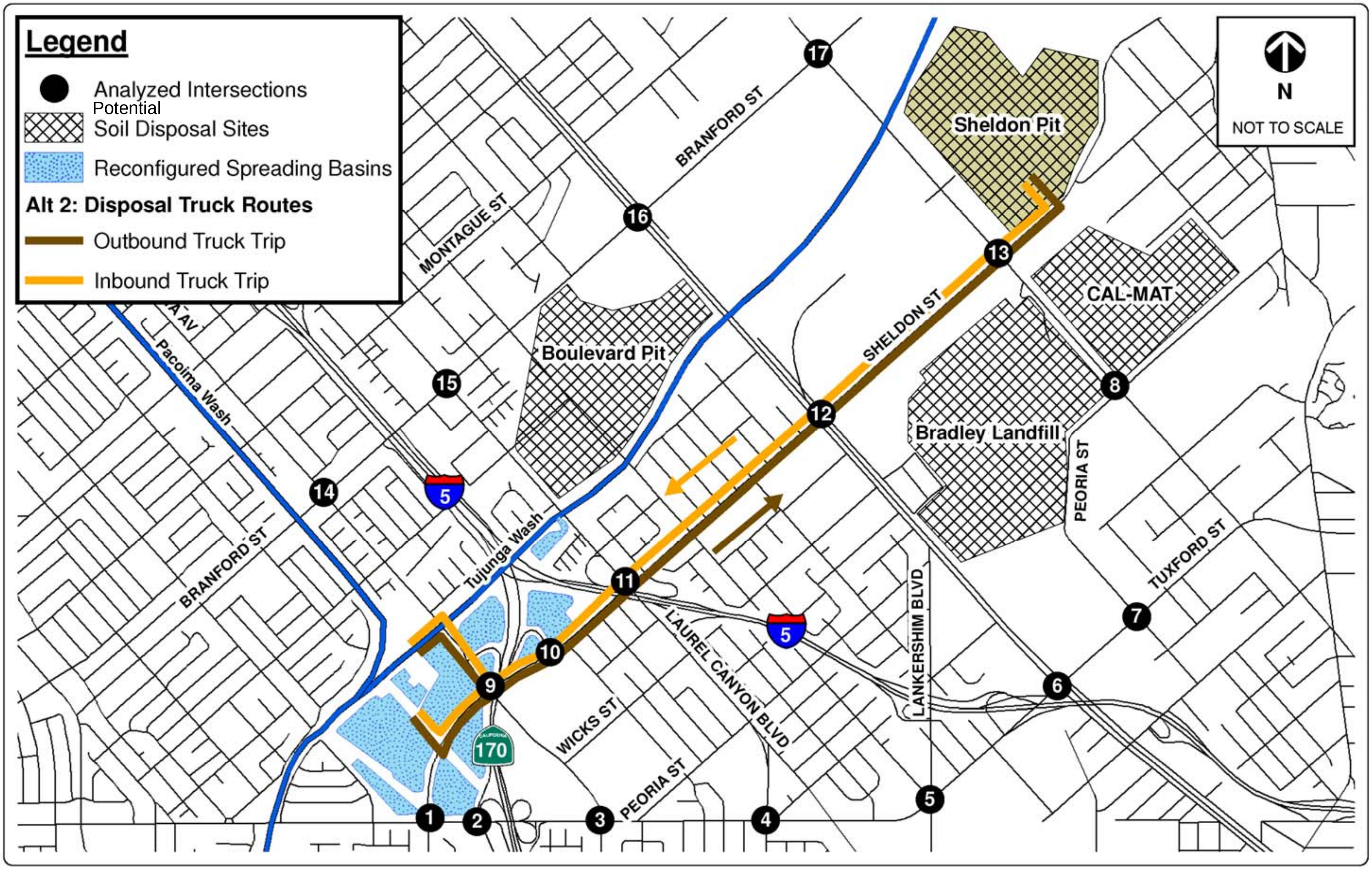
Source: Fehr & Peers, 2012

Document: Fig4.3-2TruckRoutes.pub

Date: March 26, 2012

Alternative 1
Boulevard Truck Routing Plan

Figure 4.3-2



Source: Fehr & Peers, 2012

Document:
Fig4.3-3ShelldonTruckRoute.pub

Date: March 26, 2012

Alternative 2
Sheldon Pit Truck Routing Plan

Figure 4.3-3

- Alternative 3: Cal Mat Disposal Site - Trucks will travel to Cal Mat Pit by heading eastbound on Sheldon Street (**Figure 4.3-4**). Trucks will make right turn from Sheldon Street and enter the Cal Mat Pit. Trucks exiting the pit must use the exit on Glenoaks Boulevard and must make a right turn. Trucks will return to the TSG by traveling northbound on Glenoaks Boulevard and will then make a left turn onto Sheldon Street.

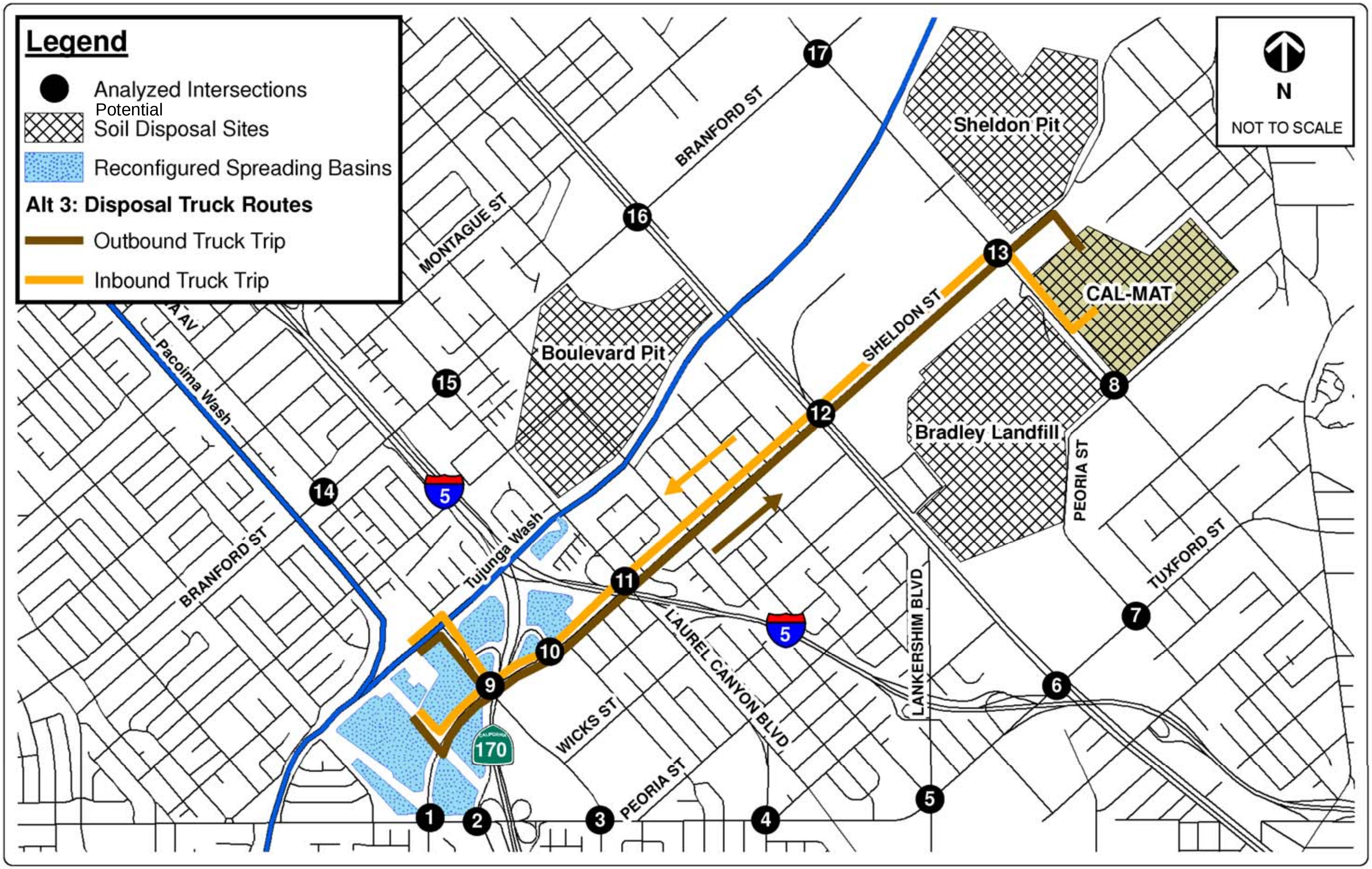
- Alternative 4: Bradley Landfill Disposal Site - Trucks will travel to Bradley Landfill by heading eastbound on Sheldon Street and will turn right onto Glenoaks Boulevard, followed by a right turn onto Peoria Street (**Figure 4.3-5**). Trucks will turn right off Peoria Street to enter Bradley Landfill, and will use the same driveway to exit the site. Trucks will return to the TSG by traveling south on Bradley Avenue and will make a right turn onto Tuxford Street. Trucks will continue onto Roscoe Boulevard and make a right onto Sheldon Street.

Each of the alternatives consists of two scenarios, based on different entrance and exit locations for trucks entering and leaving the TSG. The first scenario accounts for trucks that enter and exit via a driveway off Sheldon Street while the second scenario accounts for trucks that enter and exit via a driveway off Arleta Avenue. Both scenarios were analyzed in order to provide a conservative analysis of project impacts that evaluates all possible turning movement combinations at the intersections. The results of the intersection analysis are summarized and compared against the existing intersection conditions to determine project impacts (**Table 4.3-4**). The impact assessment is conservative in that it assumes that both workers and truck trips will occur during the peak traffic hours on the surrounding streets (7:00 to 10:00 AM and 3:00 to 6:00 PM). With this assumption, and under the scenario where trucks use the driveway off Arleta Avenue, adverse traffic impacts are predicted for the Arleta Avenue & Sheldon Street intersection under all four project alternatives. However, since none of the intersections are predicted to have a LOS worse than D, and since LADOT does not consider temporary impacts during construction to be significant, the impact of the project on existing traffic conditions is less than significant. Due to the multi-year length of the construction period, mitigation measures have been identified to further reduce less than significant impacts.

Cumulative Plus Project Traffic Impacts (2015). The 2015 cumulative base (without project) peak hour traffic volumes were analyzed to project future LOS at the study intersections during the AM and PM peak hours. Three of the 17 study intersections are projected to operate at LOS D during the AM or PM peak hours:

1. Sheldon Street & Roscoe Boulevard (LOS D in both AM and PM peak hours)
3. Arleta Avenue & Roscoe Boulevard (LOS D in the AM peak hour)
9. Arleta Avenue & Sheldon Street (LOS D in the PM peak hour)

The year 2015 cumulative plus project peak hour traffic volumes were analyzed to project future operating conditions at the study intersections and to identify specific traffic impacts resulting from the addition of project-generated traffic. Future LOS calculations include the additional project-generated trips that would be necessary during soil excavation. The results of the intersection analysis are summarized and compared against the cumulative base intersection



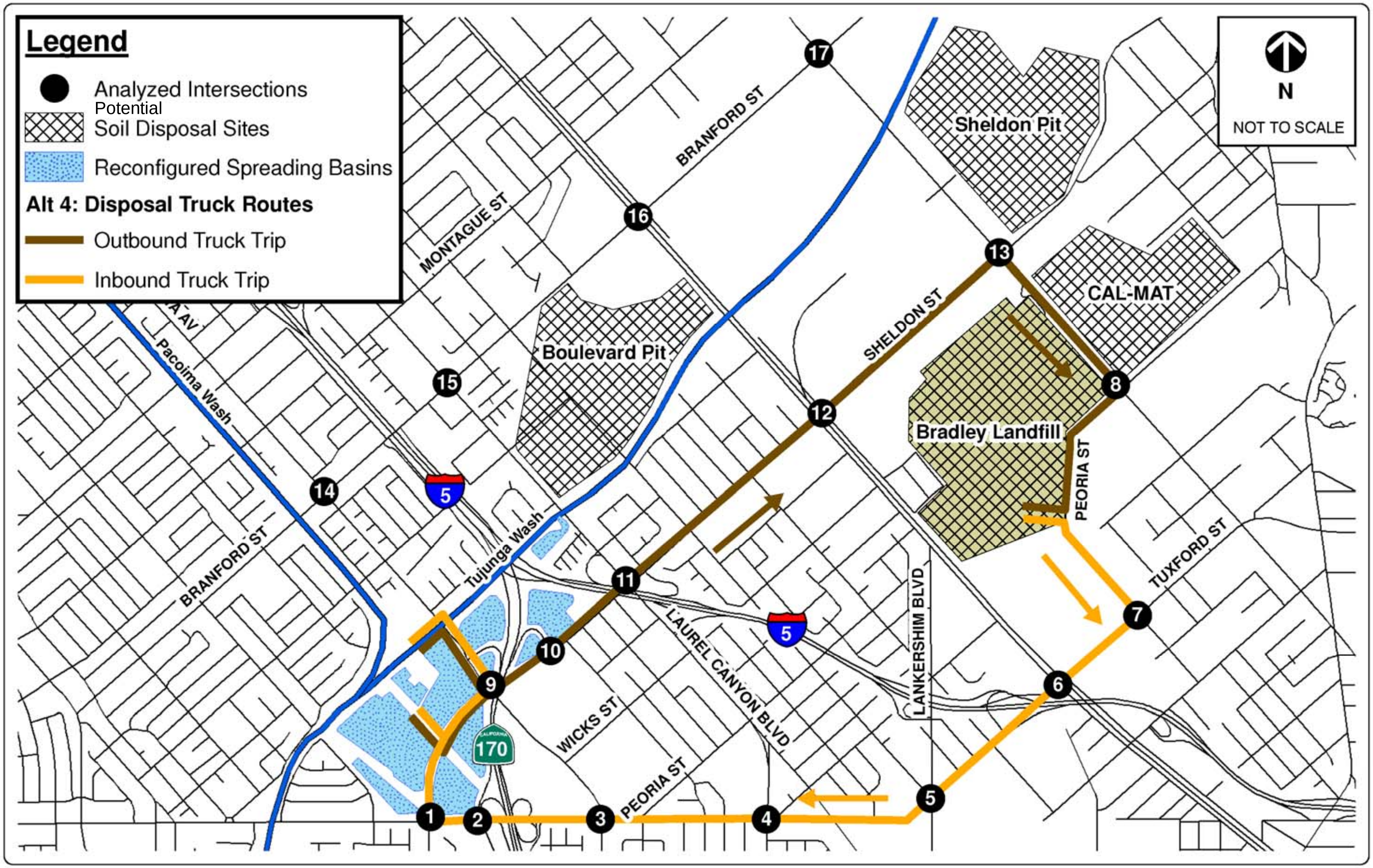
Source: Fehr & Peers, 2012

Document:
Fig4.3-4CalMatPitTruckRoute.pub

Date: March 26, 2012

Alternative 3
Cal Mat Pit Truck Routing Plan

Figure 4.3-4



Source: Fehr & Peers, 2012

Document:
Fig4.3-5BradleyRoute.pub

Date: March 26, 2012

Alternative 4
Bradley Landfill Truck Routing Plan

Figure 4.3-5

Table 4.3-4
Traffic Analysis Results – Existing (2011) Plus Project Conditions

Alternative	Temporary Adverse Impacts Predicted for:	
	Scenario 1 (trucks using driveway off Sheldon)	**Scenario 2** **(**trucks using driveway off Arleta)
1 – Boulevard Pit	None of the 17 study intersections	Arleta Ave. & Sheldon St. (intersection 9) during: AM peak hour - LOS C, change of 0.049 V/C PM peak hour - LOS D, change of 0.029 V/C
2 – Sheldon Pit	None of the 17 study intersections	Arleta Ave. & Sheldon St. during: AM peak hour - LOS C, change of 0.049 V/C PM peak hour - LOS D, change of 0.040 V/C
3 – Cal Mat Pit	None of the 17 study intersections	Arleta Ave. & Sheldon St. during: AM peak hour - LOS C, change of 0.049 V/C PM peak hour - LOS D, change of 0.040 V/C
4 – Bradley Landfill	None of the 17 study intersections	Arleta Ave. & Sheldon St. during: AM peak hour - LOS C, change of 0.060 V/C PM peak hour - LOS D, change of 0.040 V/C

Source: Fehr&Peers, 2012 (Appendix E, see Tables 6 through 9).

conditions to determine project impacts (**Table 4.3-5**). The impact assessment is conservative in that it assumes that both workers and truck trips will occur during the peak traffic hours on the surrounding streets (7:00 to 10:00 AM and 3:00 to 6:00 PM). With this assumption, adverse traffic impacts in 2015 are predicted for all four alternatives for two intersections: Sheldon Street & Roscoe Boulevard under scenario 1, and Arleta Avenue & Sheldon Street under scenario 2 (and under scenario 1 alternative 1). However, since none of the intersections are predicted to have a LOS worse than D, and since LADOT does not consider temporary impacts during construction to be significant, the impact of the project on 2015 traffic conditions is less than significant. Due to the length of the construction period, mitigation measures have been identified to further reduce less than significant impacts.

Impacts Related to Creation of Hazards. The project does not include any roadway improvements or implementation of any design features that would create sharp curves or dangerous intersections. The project does include use of heavy equipment necessary to excavate and reconfigure the existing spreading basins. However, this equipment will remain on-site during project construction and vehicles leaving the site for soil hauling will be compatible with on-street use. There will be no equipment staging on public roadways during construction of the project. The impact on traffic hazards, including emergency response, is less than significant and will be further reduced by implementation of the mitigation measures described below.

Table 4.3-5
Traffic Analysis Results – Cumulative Plus Project Conditions (2015)

Alternative	Temporary Adverse Impacts Predicted for:	
	Scenario 1 (trucks using driveway off Sheldon)	**Scenario 2** **(**trucks using driveway off Arleta)
1 – Boulevard Pit	Sheldon St. and Roscoe Blvd. during: PM peak hour – LOS D, change of 0.025 V/C Arleta Ave. & Sheldon St during: PM peak hour – LOS D, change of 0.022 V/C	Arleta Ave. & Sheldon St. during: AM peak hour - LOS C, change of 0.049 V/C PM peak hour - LOS D, change of 0.029 V/C
2 – Sheldon Pit	Sheldon St. & Roscoe Blvd. during: PM peak hour - LOS D, change of 0.025 V/C	Arleta Ave. & Sheldon St. during: AM peak hour - LOS C, change of 0.049 V/C PM peak hour - LOS D, change of 0.040 V/C
3 – Cal Mat Pit	Sheldon St. & Roscoe Blvd. during: PM peak hour - LOS D, change of 0.025 V/C	Arleta Ave. & Sheldon St. during: AM peak hour - LOS C, change of 0.049 V/C PM peak hour - LOS D, change of 0.040 V/C
4 – Bradley Landfill	Sheldon St. & Roscoe Blvd. during: PM peak hour - LOS D, change of 0.033 V/C	Arleta Ave. & Sheldon St. during: AM peak hour - LOS C, change of 0.060 V/C PM peak hour - LOS D, change of 0.040 V/C

Source: Fehr&Peers, 2012 (Appendix E, see Tables 11 through 14).

Impacts on Parking. The TSG site has adequate space available on-site for construction worker parking. Additionally, heavy equipment necessary for project construction will travel to the site one time, park on-site, and then be transported off-site at the end of the construction period. There will be no impacts on parking in the neighborhood surrounding the TSG.

Impacts on Roadway Condition. Based on the construction assumptions presented above, soil hauling for disposal of excavated soils is estimated to require approximately 680 days, or 2.6 years (assuming 5 workdays per week). Travel by 16 soil hauling trucks five days per week, eight trips per day for 2.6 years would degrade area roadways. Note that these are estimates only, and that the actual length of construction will be based on construction practices determined by the contractor. The City of Los Angeles Department of Public Works Bureau of Street Services will monitor road condition during construction of the project. Since repairs will be implemented as necessary, the impact on street maintenance will be less than significant.

4.3.4.2 Regional Transportation System Analysis

Regional transportation system impact analysis was conducted for the proposed project in accordance with the transportation impact analysis procedures outlined in 2010 CMP for Los Angeles County (LACMTA, 2010). The CMP requires that, when an EIR is prepared for a project, traffic and transit impact analyses be conducted for select regional facilities based on the quantity of project traffic expected to use these facilities.

CMP Traffic Impacts. The CMP guidelines require that the first issue addressed is the determination of the geographic scope of the study area. The criteria for determining the study area for CMP arterial monitoring intersections and for freeway monitoring locations are:

- All CMP arterial monitoring intersections where the proposed project will add 50 or more trips during either the AM or PM weekday peak hours of adjacent street traffic.
- All CMP mainline freeway monitoring locations where the proposed project will add 150 or more trips, in either direction, during either the AM or PM weekday peak hours.

The CMP arterial monitoring intersection nearest to the project site is Victory Boulevard & Woodman Avenue. Based on the project trip generation estimates and traffic volumes, the proposed project is not expected to add more than 50 vehicles per hour (vph) at any CMP monitoring intersections during the peak hours. Therefore, no further CMP arterial monitoring analysis is required.

The mainline freeway monitoring location nearest to the project site is I-5 at Osborne Street. Based on the incremental project trip generation estimates and the project trip assignment, the proposed project would not add sufficient new traffic to exceed the freeway analysis criteria at this location. Because total estimated project-related traffic in any direction during either weekday peak hour is projected to be below the minimum criteria of 150 vph, no further CMP freeway analysis is required. Therefore, the impact on the regional transportation system will be less than significant.

CMP Transit Impacts. The trip generation estimates for the project include both worker trips and truck trips during the entire construction period. It was conservatively assumed that each worker would travel alone to and from the work site and a maximum of 40 workers would be needed during the project. By applying the CMP guidelines (assuming 3.5 percent transit use), it is estimated that the project could potentially add up to two new transit person trips in both the AM and the PM peak hours. The project site is served by several established public transit routes providing connectivity to public transit services throughout the surrounding area (see Chapter 2 of **Appendix E**), potentially distributing project transit trips across multiple routes. Based on the estimated increase in project-related trips, and the temporary nature of any increase, the impact on the regional transit system will be less than significant.

4.3.4.3 Transportation Impacts During Operation

Under existing conditions, maintenance workers commute to and from the project site. Periodically, maintenance is conducted - vegetation mowing and removal, and sediment removal from the surface of the basins. Maintenance activities require haul trucks travelling to the project site and then off-site to local disposal locations. The vehicle traffic related to project operations will be similar to existing conditions. A slight increase in traffic to the site may result from installation of the recreational enhancements, from landscape maintenance and public access. However, no new workers are anticipated to be required. Therefore, impacts related to transportation and traffic during project operation will be less than significant.

4.3.5 Mitigation Measures

Construction of the proposed project could result in temporary adverse traffic impacts in the immediate vicinity of the project site, leading to localized congestion. Since additional traffic related to the project will be temporary, impacts will be adverse, but less than significant. However, due to the multi-year length of the construction period, mitigation measures TR-1 through TR-5 will be implemented to further reduce less than significant impacts.

TR-1 Construction Traffic Management Plan - A construction traffic management plan shall be prepared and submitted to LADOT for review and approval prior to the start of construction activity. This plan may designate haul routes for construction-related trucks, the location of access to the construction site, and temporary traffic control devices or flagmen, as relevant.

Where construction activities would occur within a public street right-of-way around the project site, the following mitigation measures shall also be implemented:

TR-2 Traffic Control Plan – A site-specific construction traffic control plan shall be prepared and submitted to LADOT for review and approval prior to the start of any construction work. This plan may include the location of lane closures (if any), restricted hours during which lane closures (if any) would not be allowed, local traffic detours (if any), protective devices and traffic controls (such as barricades, cones, flagmen, lights, warning beacons, temporary traffic signals, warning signs) (as relevant), access limitations for abutting properties (if any), and provisions to maintain emergency access through construction work areas (as relevant).

TR-3 Signage – Signage shall be provided indicating alternative pedestrian and bicycle access routes, if necessary where existing facilities would be affected. This would include the sidewalks and pedestrian pathways around the perimeter of the project site.

TR-4 Advanced Notice – Advance notice shall be provided of planned construction activities to residents, businesses and property owners immediately adjacent to the construction site.

TR-5 Emergency Access Coordination – Coordination shall be conducted with emergency service providers (police, fire, ambulance and paramedic services) to provide advance notice of ongoing construction activity and construction hours.

4.3.6 Impact Significance After Mitigation

Impacts on traffic during project construction will be adverse. However, since no intersections are predicted to experience a LOS worse than D, and since impacts will be temporary, impacts will be less than significant. However, in consideration of the length of the construction period (approximately 2.6 years), mitigation measures have been identified to reduce project-related impacts. After incorporation of the mitigation measures identified above, project impacts related to transportation and traffic will be less than significant.

4.3.7 Cumulative Impacts with Related Projects

As described above, the traffic analysis conducted for the project considered impacts of the proposed project and known related projects that would generate additional vehicle trips in the project area. Seven related projects (housing, school, and commercial) were identified by LADOT. As detailed above, the combined traffic impacts of the proposed project and the related projects will be less than significant and therefore less than cumulatively considerable. With implementation of mitigation measures TR-1 through TR-5, cumulative impacts will be further reduced.

4.3.8 Project Alternatives

4.3.8.1 No Project

Under No Project, enhancements to the TSG would not be implemented and the facility would continue to operate as under existing conditions. Maintenance workers would commute to the project site, and periodic basin maintenance could require soil hauling to adjacent landfills or aggregate processing facilities. The traffic related to these activities would be the same as under existing conditions. No changes in LOS at area intersections would result related to activities at the TSG.

4.3.8.2 Soil Disposal Alternatives

Four project alternatives have been defined for the disposal of soils from the TSG Enhancement project: 1) Boulevard Pit, 2) Sheldon Pit, 3) Cal Mat Pit, and 4) Bradley Landfill and Recycling Center. Two scenarios were defined for each alternative to accurately represent all likely truck movements while soil is being transported out of the TSG.

As detailed above, all four alternatives would have similar impacts on existing traffic under both scenarios. Under scenario 2 (trucks using driveway off Arleta Avenue) temporary reduction in the LOS at Arleta Avenue & Sheldon Street would be the same under all alternatives, but the V/C ratio changes would vary slightly. All four alternatives would also have similar impacts on future (2015) conditions, with minor variation in the predicted V/C ratio changes. Under scenario 1 (trucks using driveway off Sheldon Street), Alternative 1 (Boulevard Pit) would not only adversely impact Sheldon Street & Roscoe Boulevard (as would the other three alternatives) but it would also impact Arelta Avenue & Sheldon Street. However, none of the predicted impacts (existing or future conditions) to intersections in the project vicinity under any of the alternatives would result in LOS E or F (normally unacceptable) and all impacts would be temporary, occurring only during project construction.

Section 5
Additional CEQA Analyses

This section summarizes impact determinations for the proposed project and provides additional environmental analyses required in the State CEQA Guidelines for EIRs.

5.1 EFFECTS FOUND NOT TO BE SIGNIFICANT

Based on the analyses presented in the Initial Study (**Appendix A**) and **Section 4** of this EIR, **Table 5-1** summarizes the potential environmental topics for the project found to have no impacts, beneficial impacts, less than significant impacts, or less than significant impacts where mitigation has been identified to further reduce adverse effects.

Table 5-1
Tujunga Spreading Basins Enhancement Project
Summary of Less Than Significant Impacts

Topic	No Impact	Less than Significant Impact	Less than Significant Impact With Mitigation Identified to Further Reduce Adverse Effects
Aesthetics – scenic vistas and scenic resources	√		
Aesthetics – visual character and light and glare		√	
Agriculture and Forest Resources	√		
Air Quality – project operation		√	
Air Quality – odors		√	
Biological Resources – special status species	√		
Biological Resources – riparian habitat and wetlands		√	
Biological Resources – migratory species		√	
Biological Resources – policies, ordinances, and habitat plans	√		
Cultural Resources – historic resources	√		
Geology – earthquake hazards		√	
Geology - landslides	√		
Soils	√		
Greenhouse Gas		√	
Hazardous Materials		√	
Safety Hazards – near private airstrips	√		

Topic	No Impact	Less than Significant Impact	Less than Significant Impact With Mitigation Identified to Further Reduce Adverse Effects
Hazards - emergency response			√
Hazards – wildland fires	√		
Hydrology – water quality		√ (beneficial)	
Hydrology – groundwater volume		√ (beneficial)	
Hydrology – flooding, runoff, drainage		√ (beneficial)	
Hydrology – seiche, tsunami, mudflow		√	
Land Use and Planning	√		
Mineral Resources	√		
Noise – project operations		√	
Noise – airport/airstrip areas	√		
Population and Housing	√		
Public Services - police		√	
Public Services – fire, schools, parks, other		√	
Recreation – increased use of parks	√		
Recreation – new facilities		√ (beneficial)	
Traffic – project construction			√
Traffic – project operation	√		
Traffic – air patterns	√		
Traffic – congestion management plan		√	
Traffic – public transit			√
Utilities – water, wastewater, solid waste regulations	√		
Utilities - landfills		√	

5.1.1 Mitigation Measures to Further Reduce Less than Significant Effects

Impacts on traffic during project construction will be adverse. However, since no intersections are predicted to experience a LOS worse than D, and since impacts will be temporary, impacts will be less than significant. However, in consideration of the multi-year length of the construction period, mitigation measures TR-1 through TR-5 will be incorporated into the project to further reduce less than significant traffic and emergency response impacts:

TR-1 Construction Traffic Management Plan – A construction traffic management plan shall be prepared and submitted to LADOT for review and approval prior to the start of construction activity. This plan may designate haul routes for construction-related trucks, the location of access to the construction site, and temporary traffic control devices or flagmen, as relevant.

Where construction activities would occur within a public street right-of-way around the project site, the following mitigation measures shall also be implemented:

TR-2 Traffic Control Plan – A site-specific construction traffic control plan shall be prepared and submitted to LADOT for review and approval prior to the start of any construction work. This plan may include the location of lane closures (if any), restricted hours during which lane closures (if any) would not be allowed, local traffic detours (if any), protective devices and traffic controls (such as barricades, cones, flagmen, lights, warning beacons, temporary traffic signals, warning signs) (as relevant), access limitations for abutting properties (if any), and provisions to maintain emergency access through construction work areas (as relevant).

TR-3 Signage – Signage shall be provided indicating alternative pedestrian and bicycle access routes, if necessary where existing facilities would be affected. This would include the sidewalks and pedestrian pathways around the perimeter of the project site.

TR-4 Advanced Notice – Advance notice shall be provided of planned construction activities to residents, businesses and property owners immediately adjacent to the construction site.

TR-5 Emergency Access Coordination – Coordination shall be conducted with emergency service providers (police, fire, ambulance and paramedic services) to provide advance notice of ongoing construction activity and construction hours.

5.2 POTENTIALLY SIGNIFICANT IMPACTS MITIGATED TO LESS THAN SIGNIFICANT LEVELS

5.2.1 Cultural Resources

The project site does not contain any known cemeteries and was previously disturbed during excavation, grading, and construction of the existing spreading grounds. Records searches and field survey did not identify any archaeological or paleontological resources, or human remains. However, construction of the proposed project will involve up to an additional 18 feet of excavation and therefore native soils containing previously unidentified cultural resources may be disturbed. Therefore, in order to mitigate potentially significant impacts on cultural resources to less than significant levels, mitigation measures CR-1 and CR-2 will be incorporated into the project:

CR-1 Cultural Resources Awareness Training – Construction personnel and staff shall be given training by a qualified archaeologist on the identification of possible archaeological and paleontological resources that may be present in the area. In the event potential archaeological or paleontological resources are encountered during excavation, work in the vicinity of the discovery shall halt until appropriate treatment of the resource is determined by a qualified archaeologist/paleontologist in accordance with the provisions of CEQA Section 15064.5.

CR-2 Reporting for Discovery of Human Remains – If human remains are encountered during project activities, work within 25 feet of the discovery shall be redirected and the County Coroner notified immediately. At the same time, an archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. Project personnel shall not collect or move any human remains and associated materials. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

5.2.2 Noise During Project Construction

Noise generated during project construction would result in a substantial increase over ambient noise levels and exceed LAMC Section 112.05 limits for heavy construction equipment. To reduce noise impacts to less than significant levels, noise control measures N-1 through N-3 shall be implemented.

N-1 Construction Hours - Construction shall be limited to:

- Weekdays: 7:00 AM to 9:00 PM
- Saturdays: 8:00 AM to 6:00 PM
- No construction shall occur on Sundays or national holidays.

N-2 Mufflers - Construction equipment, fixed and mobile, shall be equipped with properly operating and maintained noise mufflers and intake silencers, consistent with manufacturers' standards. Each piece of equipment will be individually inspected to ensure proper operation of the muffler and silencer equipment.

N-3 Noise Control Plan - A Noise Control Plan shall be prepared prior to the start of construction, and implemented during the entire construction period. The Plan shall:

- Predict noise levels during construction activity based on the specific construction equipment to be used at the site. If equipment noise levels are not available, these shall be measured in the field.

- Identify areas of the construction site where noise control is required to meet noise ordinance standards. For these areas, identify the additional measures, which may include: specialized mufflers or silencers, directional exhaust pipes, damping and sound absorptive material, and/or acoustical barriers. Where relevant, the size, number and location of portable acoustical barriers and/or noise control curtains to be used during construction will be detailed. The height and length of the barriers shall be determined based on the location of the construction activity, specific construction equipment to be used (type and number) and distance to the receptors.

- Predict noise levels during construction activity with use of specialized mufflers or silencers, directional exhaust pipes, damping and sound absorptive material, and/or acoustical barriers, as relevant.

- Document the reduction in construction noise via monitoring. Noise monitoring shall be conducted a minimum of 1 day per week when construction is within 400 feet of a residence.

5.3 SIGNIFICANT ENVIRONMENTAL IMPACTS FOR WHICH NO FEASIBLE MITIGATION IS AVAILABLE

Maximum daily air pollutant emissions would be above the regional significance thresholds for ROG, CO, NO_x, and $PM_{2.5}$ and above the local significance thresholds for NO_x, PM_{10} and $PM_{2.5}$. To reduce air quality impacts to the extent possible, the following air emission control measures shall be implemented.

AIR-1 Equipment Maintenance – All equipment shall be properly tuned and maintained in accordance with manufacturer's specifications.

AIR-2 Equipment Efficiency – As feasible, construction equipment will be selected that has low pollutant emissions and high energy efficiency. Factors to consider include model year, alternative fuels (e.g., compressed natural gas, biodiesel, emulsified diesel, methanol, propane, butane, and low sulfur diesel) and lean NOx catalyst.

AIR-3 Equipment Operation – The contractor shall maintain and operate construction equipment to minimize exhaust emissions. During construction, trucks and vehicles will minimize idling when not in use to the extent feasible.

AIR-4 Generator Use – To the extent possible, power will be obtained from power poles (the electrical grid) rather than the use of large generators on site.

AIR-5 Catalytic Converters – Catalytic converters shall be installed on all heavy construction equipment, where feasible.

Implementation of dust control measures in compliance with SCAQMD Rule 403 will substantially reduce particulate matter emissions during project construction. As mitigated, particulate emissions are predicted to be below regional significant thresholds but potentially (depending on the actual reduction efficiencies achieved for the project) above local significant thresholds. Since a wide-range of dust control measures will be incorporated into the project, additional feasible mitigation measures to further reduce particulate matter have not been identified. [Appendix C includes dust BACM Tables 1, 2, and 3 of Rule 403.]

Implementation of mitigation measures AIR-1 through AIR-5 would reduce air pollutant emissions during project construction. However, emissions reductions that can be achieved with these measures are not quantifiable and are not anticipated to reduce emissions of ROG, CO, and NO_x below levels of significance. Use of heavy construction equipment and vehicles is required in order to implement the project. Emissions may be brought below thresholds by extending construction schedules, but this results in greater emissions overall and delays projects unnecessarily. Additional mitigation that could reduce emissions (although not necessarily below levels of significance) would be to mandate specific equipment and vehicles (based on air pollutant emission levels) to be used during construction. For example, restricting the contractor from using older equipment by mandating that, from the start of construction, all off-road diesel-powered construction equipment greater than 50 hp meet USEPA Tier 3 off-road emission standards, and that post January 1, 2015, all off-road diesel-powered construction equipment greater than 50 hp meet USEPA Tier 4 emission standards, was considered. Similarly, mandating the use of alternative fuel vehicles for soil hauling trucks was considered.

However, in order to maintain an open construction contract bidding process, specification of equipment types is considered infeasible. To ensure that contracts can be bid by a range of contractors (large and small), the County does not specify the number or types of vehicles and/or equipment to be used for construction projects. Therefore, there are no feasible mitigation measures that would reduce air quality impacts to below a level of significance. Maximum daily emissions associated with construction for the TSG Enhancement project would remain significant with implementation of feasible mitigation measures. However, construction emissions would not have a long-term air quality impact because these emissions would cease at the completion of construction. Overall, since construction air pollutant emissions as mitigated are anticipated to exceed SCAQMD thresholds, construction air emissions are a significant environmental effect that cannot be avoided if the proposed project is implemented. The long-term benefits of the proposed project to local water supply will outweigh the temporary adverse impact on air quality.

5.4 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Adverse environmental effects of the project related to construction – noise, traffic and air pollutant emissions – will all cease once project construction is complete and will not result in irreversible environmental changes. However, construction of the project will require the use of heavy equipment, workers' vehicles, and soil disposal haul trucks. The equipment and vehicles will consume nonrenewable fossil fuels for the length of construction, estimated at approximately 2.6 years. Since the objective of the project is to increase stormwater recharge into the San Fernando Groundwater Basin, thus increasing local water supplies, the fuel use may be offset by corresponding reductions in energy use associated with well pumping, and with transport and treatment of imported water supplies. The benefits of the project therefore justify the use of irreplaceable resources (fossil fuels).

Operation of the project will require similar operations and maintenance activities as under existing conditions; there may be some minor increase in equipment use related to maintenance of landscaped areas, if implemented. However, no new workers will be required for facility operation, and overall, there will be no substantial additional consumption of nonrenewable resources for project operation. There are no significant adverse environmental changes associated with project operation.

5.5 GROWTH-INDUCING IMPACTS

The CEQA Guidelines Section 15126.2(d) require that an EIR identify:

- 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
- Obstacles to growth removed by the project
- Characteristics of the projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively

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. The project will facilitate the capture of additional stormwater for recharge of the San Fernando Groundwater Basin, which will increase available water supplies in the region. However, no new groundwater extraction systems, potable water treatment or water distribution systems will be constructed as part of this project. Therefore, the project will not be directly or indirectly growth-inducing related to expansion of infrastructure systems.

Construction of the project will require approximately 40 workers for an estimated 2.6 years. It is anticipated that workers would frequent businesses in the project area during this period. Due to the limited number of workers required and the temporary nature of construction, the impact on economic growth is less than significant. Operation of the project will not require additional workers over existing operations and maintenance staff.

Since the project will not expand the potable water system, and since construction will only temporarily provide a limited number of jobs in the area, the project will have a less than significant impact on population and economic growth.

5.6 ALTERNATIVES TO THE PROPOSED PROJECT

5.6.1 No Project

Under No Project, the spreading grounds would not be improved and there would be no disposal requirement for approximately 1.3 million cubic yards of soil. Stormwater could continue to be diverted from the Tujunga Wash under No Project, since the methane gas migration concern at the adjacent Arleta Landfill has been resolved. However, high flows from the Pacoima and Tujunga Washes could not be diverted to the spreading basins. Since the trash racks and low flow treatment area would not be constructed under No Project, water quality would not be improved. Without the project, fine soils that reduce percolation would not be removed from the bottom of the basins and additional conveyance features would not be installed to transport stormwater among basins. The maximum volume of stormwater that could be recharged to the groundwater table under No Project is limited by the existing intake (250 cfs maximum) and the existing percolation rate (140 cfs), substantially less than the volume anticipated under the project.

Under No Project, temporary construction-related air pollutants would not be emitted, noise impacts on adjacent residences would not occur, and traffic for project soil disposal would not be added to streets in the project vicinity. However, No Project does not meet the project objective of increasing stormwater recharge into the San Fernando Groundwater Basin through enhancement and operation of the TSG facility.

5.6.2 Soil Disposal Location Alternatives

Since the objective of the proposed project is to increase recharge of the San Fernando Groundwater Basin at the TSG, alternatives to the proposed project focused on the off-site portion of the project with the greatest potential environmental impacts – disposal of approximately 1.3 million cubic yards of excess soil. During project planning, on-site balancing of the soils, off-site disposal by conveyor, and off-site disposal via trucks traveling in the Tujunga Wash Channel were evaluated and found to be infeasible (Section 3). After elimination of these infeasible options, alternatives definition focused on several off-site disposal locations for excess soils:

- Alternative 1 – Boulevard Pit Disposal Site
- Alternative 2 – Sheldon Pit Disposal Site
- Alternative 3 – Cal Mat Disposal Site
- Alternative 4 – Bradley Landfill and Recycling Center Disposal Site
- Alternative 5 – Combination of Soil Disposal Alternative Locations

LADWP has been in communication with Vulcan Materials Company regarding use of TSG soils at Boulevard Pit. This location is closest to the TSG and the excess soils may be able to be used for a construction project at the Boulevard Pit. Therefore, it is the preferred alternative. Environmental impacts of the various disposal locations are:

Air Quality – All of the disposal sites are near the project. The Boulevard Pit disposal site is closest to the TSG, directly northeast of the site. This alternative would require the least amount of truck travel. Alternatives 2, 3 and 4 are along Sheldon Street northeast of the project site. Travel to these alternative sites would require the longest truck travel distance. Air pollutant emissions would be slightly higher for Alternatives 2, 3, and 4 than for Alternative 1, which involves the shortest travel distance. Under any of the alternatives, including using more than one of the disposal options, air pollutant emissions would be temporarily significant as mitigated.

Noise – Significant noise impacts from project construction would occur during normal working hours at residential receptors adjacent to the TSG. The soil disposal location selected would not impact the noise levels from the on-site construction equipment. Mobile noise generated during soil hauling activities will be less than significant under all alternatives. However, Alternative 1, Boulevard Pit, would require the least amount of truck travel and therefore it would generate the least amount of mobile noise.

Traffic – All four soil disposal location alternatives would have similar impacts on existing traffic and future (2015) traffic conditions. Under scenario 1 (trucks using driveway off Sheldon Street), Alternative 1 (Boulevard Pit) would not only adversely impact Sheldon Street and Roscoe Boulevard (as would the other three alternatives) but it would also impact the intersection of Arelta Avenue and Sheldon Street. However, none of the predicted impacts (existing or future conditions) to intersections in the project vicinity under any of the alternatives would result in LOS E or F (normally unacceptable) and all impacts would be temporary, limited to project construction.

5.6.3 Environmentally Superior Alternative

As compared with No Project, the proposed project with any of the identified soil disposal options is considered the environmentally superior alternative. No Project would not result in noise impacts on adjacent residences during construction, add traffic to area streets, or result in significant air pollutant emissions. However, all of the adverse impacts identified for the project are temporary and will be mitigated as feasible. No Project would not allow the capture of additional stormwater from the Tujunga and Pacoima Washes, would not recharge additional water to the San Fernando Groundwater Basin, and would not increase local water supplies. Under No Project, environmental impacts (e.g., energy use, and related air pollutant emissions) could result from well pumping, and transport and treatment of additional imported water supplies. In the context of existing water shortages in the Los Angeles area, the long-term benefit of operation of the proposed project outweighs the short-term adverse impacts related to project construction. Therefore, the proposed project is the environmentally superior alternative.

The Boulevard Pit soil disposal location is closest to the TSG and therefore will require the least truck travel during project construction. While this will decrease air pollutants emitted, this alternative has a slightly greater impact on traffic at one intersection (Arleta Avenue and Sheldon Street). All of the soil disposal alternatives would have the same level of impact on noise on residences adjacent to the project site. The Boulevard Pit alternative would have slightly less mobile noise impacts. Overall, since the differences in the impacts associated with the alternative soil disposal locations are minimal, all of the alternatives are considered comparable in their level of environmental impact. Therefore, the proposed project with any of the soil disposal alternatives (or a combination of locations) is the environmentally superior alternative.

Section 6
References, Acronyms and Preparers

This section includes references used during preparation of the EIR, and acronyms and abbreviations used in the document. Preparers of the EIR are also listed.

6.1 REFERENCES AND BIBLIOGRAPHY

Cal Mat Company [now Vulcan Materials Company]. 1990. A Plan for Reclamation: Sheldon Site – Sun Valley. CPC 88-0207 SMA. In Conformance with SMARA 1975 & Los Angeles City Ordinance 155,950. On file with City of Los Angeles Department of City Planning.

California Air Resources Board (CARB). 2007. OFFROAD2007 Model.
Available: http://www.arb.ca.gov/msei/offroad/offroad.htm.

-----. 2008a. Climate Change Scoping Plan, a framework for change. Pursuant to AB 32 the California Global Warming Solutions Act of 2006. December.

-----. 2008b. Preliminary Draft Staff Proposal: Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under CEQA.
Available: http://www.arb.ca.gov/cc/localgov/ceqa/meetings/102708/wkspslides102708.pdf

-----. 2011. EMFAC2011 Model. Available:
http://www.arb.ca.gov/jpub/webapp//EMFAC2011WebApp/rateSelectionPage_1.jsp.

-----. 2012a. Ambient Air Quality Standards. March 23, 2012. Available:
http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

-----. 2012b. Air Quality Data Statistics. March 23, 2012. Available:
http://www.arb.ca.gov/adam/index.html.

California Code of Regulations. 2010. Title 14 § 15000 et seq. Guidelines for Implementation of the California Environmental Quality Act.

California Department of Transportation. 2002. Guide for the Preparation of Traffic Impact Studies. December.

California Energy Commission. 2006. Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004. CEC-600-2006-013-D.

California State Legislature. 2006. California Global Warming Solutions Act of 2006. Assembly Bill 32. Health and Safety Code Division 25.5. Signed into law: September 27, 2006.

Conrock Co. and California Portland Cement Co. 1977. Reclamation Plan (Council File No. 76-2223 (Gravel District), City Planning Case No. 26002 (R&G). Dated April 26, 1977. On file at the City of Los Angeles Department of City Planning.

Fehr&Peers. 2012. Traffic Impact Analysis for the Tujunga Spreading Grounds Enhancement Project. Prepared for MWH Americas, Inc. March 2012. [Full report included as Appendix E of the Draft EIR.]

Institute of Transportation Engineers. 2008. Trip Generation. 8th Edition.

Intergovernmental Panel on Climate Change. 2007. Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, Pachauri, R.K and Reisinger, A. (eds.)]. IPCC, Geneva, Switzerland, 104 pp.

Leadership Committee. 2006. Greater Los Angeles County Integrated Regional Water Management Plan (IRWMP). Managed by the Los Angeles County Flood Control District.

(City of) Los Angeles. 1992. City of Los Angeles General Plan, Air Quality Element.

(City of) Los Angeles Department of Transportation. 2011. Traffic Study Policies and Procedures. August.

(City of) Los Angeles Department of Water and Power (LADWP). 2008. City of Los Angeles Water Supply Action Plan. Securing L.A.'s Water Supply. May 2008.

Los Angeles County Department of Public Works. 2004. Final Program Environmental Impact Report for the Sun Valley Watershed Master Plan. SCH No. 2002111051.
Prepared by MWH Americas, Inc.

Los Angeles County Metropolitan Transportation Authority. 2010. Congestion Management Program. Prepared by Long Range Planning and Coordination. Draft 2010.

South Coast Air Quality Management District (SCAQMD). 1993. CEQA Air Quality Handbook. Revised 1999.

-----. 2003a. Final Localized Significance Threshold Methodology. Revised July 2008.

-----. 2003b. Health Risk Assessment guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling for CEQA Air Quality Analysis.

-----. 2006. Final Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds. October.

----. 2007. Final 2007 Air Quality Management Plan (for the South Coast Air Basin). June.

-----. 2007. OFFROAD Emission Factors.
Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html.

-----. 2008. Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans. Board Meeting Date: December 5, 2008. Agenda No. 31.

Transportation Research Board. 1980. Transportation Research Circular No. 212, Interim Materials on Highway Capacity.

-----. 2000. Highway Capacity Manual (HCM2KE). U.S. Customary Version.

United State Environmental Protection Agency (USEPA). 1971. Noise from Construction Equipment and Operations, Building Equipment and Home Appliances. Authored by: Bolt, Beranek and Newman, Inc., Cambridge, Mass. Report Number: EPA-68-04-0047.

-----. 2008. San Fernando Valley (area 1 North Hollywood And Burbank) Site Overview Available: http://yosemite.epa.gov /r9/sfund/r9sfdocw.nsf/ce6c60ee7382a473882571af007af70d /a7dbbd3edaaf5cd788257007005e945f!OpenDocument. San Fernando Valley (Area 3 Verdugo) Site Overview Available: http://yosemite.epa.gov /r9/sfund/r9sfdocw.nsf/webdisplay/oid-7ff8a82b0ffeb4418825660b007ee677?OpenDocument.

VSA n Associates. 2012. Tujunga Spreading Grounds Enhancement Project Noise Impact Analysis. Prepared for MWH Americas Inc., April 5, 2012. [Full report included as Appendix D of the Draft EIR.]

Western Regional Climatic Center. 2012. Climate data for Tujunga, accessed May 23, 2012. Available: http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca9047.

6.2 ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
AQMP	Air Quality Management Plan
ASTM	American Society for Testing and Materials
ATSAC	Automated Surveillance and Control
BASH	Bird Air Strike Hazard
BMPs	Best Management Practices
BOU	Burbank Operable Unit
CAA	Clean Air Act
CAAA	California Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
Cal/EPA	California Environmental Protection Agency
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
CH_4	methane
CIWMB	California Integrated Waste Management Board
CMP	Congestion Management Program
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO_2-e	carbon dioxide equivalent
CWA	Clean Water Act
dBA	Decibel, A-weighted scale
EDR	Environmental Data Resources, Inc.
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
FEMA	Federal Emergency Management Agency
FMMP	Farmland Mapping and Monitoring Program
GHG	Greenhouse Gas
HFC	hydrofluorocarbons
HFE	hydrofluorinated ethers
hp	horsepower
H_2S	hydrogen sulfide
Hwy	Highway
Hz	hertz
I	Interstate
IRWMP	(Greater Los Angeles) Integrated Regional Water Management Plan
IS	Initial Study
LABOS	(City of) Los Angeles Bureau of Sanitation
LACMTA	Los Angeles County Metropolitan Transportation Authority
LADOT	(City of) Los Angeles Department of Transportation
LADWP	(City of) Los Angeles Department of Water and Power
LAFD	Los Angeles Fire Department
LAMC	Los Angeles Municipal Code

LAPD	Los Angeles Police Department
Ldn	day/night noise level
LEA	(Waste) Local Enforcement Agency
Leq	equivalent noise level
LOS	level of service
LST	Localized Significance Threshold
MCL	Maximum Contaminant Level
MMRP	Mitigation Monitoring and Reporting Program
MMT	million metric tons
MPO	Metropolitan Planning Organization
MTA	(County of Los Angeles) Metropolitan Transportation Authority
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NF_3	nitrogen trifluoride
NHOU	North Hollywood Operable Unit
NO_2	nitrogen dioxide
NO_3	nitrate
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
O_3	ozone
OEHHA	(California) Office of Environmental Health Hazard Assessment
OPR	(Governor’s) Office of Planning and Research
Pb	lead
PCE	Passenger Car Equivalent
PCE	tetrachloroethylene
PFC	perfluorocarbons
$PM_{2.5}$	particulate matter 2.5 microns or less in diameter
PM_{10}	particulate matter 10 microns or less in diameter
ppm	parts per million
ROG	reactive organic gases
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board (Regional Board)

SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coast Information Center
SF_6	sulfur hexafluoride
SFV	San Fernando Valley
SIP	State Implementation Plan
SMARA	(California) Surface Mining and Reclamation Act
SNA	Significant Natural Areas
SO_2	sulfur dioxide
SO_x	sulfur oxides
SO_2	sulfur dioxide
SR	State Route
STC	Sound Transmission Class
SWPPP	Storm Water Pollution Prevention Plan
TAC	Toxic Air Contaminants
TCE	trichloroethylene
TSG	Tujunga Spreading Grounds
µg/m3	micrograms per cubic meter
USEPA	United State Environmental Protection Agency
UST	Underground Storage Tank
V/C	volume-to-capacity (ratio)
VOC	volatile organic compound
vph	vehicles per hour

6.3 PREPARERS OF THE ENVIRONMENTAL IMPACT REPORT

Prepared by:

Los Angeles Department of Water and Power
Environmental Services
111 North Hope Street, Room 1044
Los Angeles, CA 90012

Charles C. Holloway, Manager of Environmental Planning and Assessment
Hal Messinger, Environmental Project Manager
Art Castro, Project Engineer

Technical Assistance Provided by:

MWH Americas, Inc.

Sarah Garber
Project Manager
Over 22 years of experience in the preparation of CEQA and NEPA documents, SCAQMD Certified Permitting Professional

Janet Fahey, D.Env., P.E.
Technical Reviewer
Over 35 years of experience in the environmental impact analysis and water resources planning

Juan Diaz-Carreras, AICP
Task Leader for the Initial Study
Over 13 years of experience in environmental planning

Lauren Siniawer
Project Planner for the Initial Study
Over 7 years of experience in environmental planning

Jackie Silber
GIS Professional
Over 11 years of experience in mapping

BonTerra Consulting
Patrick O. Maxon, RPA, Director of Cultural Resources
Marc T. Blain, Associate Biological Resources Manager
Brian Daniels, Senior Biologist
Andrea D. Edwards, Biologist

Fehr&Peers
Netai Basu, AICP, Project Manager for Traffic Report
Rafael Cobian, P.E., LEED GA, Project Engineer for Traffic Report
Leah Ramos, Document Specialist for Traffic Report

Scientific Resources Associated
Valorie Thompson, Ph.D., Air Quality Analyst

VSA n Associates
Mahabir S. Atwal, Ph.D., Noise Report Manager

APPENDIX A

Notice of Preparation
and
Initial Study
for
Tujunga Spreading Grounds Enhancement Project

Department of Water and Power the City of Los Angeles

ANTONIO R. VILLARAIGOSA
Mayor

RONALD O. NICHOLS
General Manager

NOTICE OF PREPARATION

Date: February 13, 2012

To: Agencies, Organizations, and Interested Parties

Subject: Notice of Preparation of an Environmental Impact Report for the Tujunga Spreading Grounds Enhancement Project

The City of Los Angeles Department of Water and Power (LADWP) is proposing to enhance the existing Tujunga Spreading Grounds (TSG) to increase stormwater recharge into the San Fernando Groundwater Basin. As the Lead Agency under the California Environmental Quality Act (CEQA), LADWP has determined that an Environmental Impact Report (EIR) will be prepared for the Tujunga Spreading Grounds Enhancement Project (proposed Project).

Project Location: The LADWP TSG facility is located at 34° 13' 39" N and -118° 24' 54" W, adjacent to the Sheldon-Arleta Landfill in the City of Los Angeles, Los Angeles County. The TSG is located approximately 17 miles northwest of downtown Los Angeles in the northeastern portion of the San Fernando Valley at the intersection of Roscoe Boulevard and Sheldon Street.

Project Description: The proposed enhancement project for TSG will alter the current intake facility to capture low flows; create a treatment area for the low flows; install two new intake facilities to capture high flows from the Tujunga Wash and Pacoima Wash Diversion Channels; install devices to prevent widespread distribution of trash within the TSG; reactivate, deepen and/or combine basins to increase the facility's storage and recharge capacity; install new inter-basin flow controls; and install telemetry on all diversion facilities. The objective of the Tujunga Spreading Grounds Enhancement Project (project) is to increase stormwater recharge into the San Fernando Groundwater Basin through enhancement and operation of the TSG facility.

In addition to the consideration of a No Project alternative, the EIR will evaluate options for the disposal of excess soil anticipated to be generated by the Project. Specific disposal locations, haul routes and access points for disposal will be identified and analyzed in further detail in the EIR.

Water and Power Conservation ... a way of life

111 North Hope Street, Los Angeles, California 90012-2607 *Mailing address:* Box 51111, Los Angeles 90051-5700
Telephone: (213) 367-4211 *Cable address:* DEWAPOLA

Potential Environmental Effects: Potential environmental impacts that may occur as a result of the proposed Project include Air Quality, Greenhouse Gas Emissions, Noise, and Transportation and Traffic impacts (including traffic hazards). An analysis of these potential environmental impacts and other potential impacts that could be mitigated to a less-than-significant level is provided in an Initial Study Checklist, which is attached or can be reviewed at the following libraries:

Panorama City Branch Library
14345 Roscoe Blvd.
Panorama City, CA 91402-4222

Valley Plaza Library
12311 Vanowen Street
Los Angeles, CA 91605-5695

Pacoima Branch Library
13605 Van Nuys Boulevard
Los Angeles, CA 91331-3697

The Initial Study may also be viewed at LADWP offices during normal business hours and at the following website address:
www.ladwp.com/envnotices

Public Review Period: LADWP invites the views of your agency regarding the scope and content of the environmental information to be included in the EIR, relevant to your agency's statutory responsibilities in connection with the proposed Project. Your agency will need to use the EIR when considering your permit or other discretionary approval your agency may issue for the proposed Project.

Due to the time limits mandated by State Law, your response must be received by 5:00 p.m. **March 15, 2012**. Please indicate a contact person in your response and submit your response to the following address:

Los Angeles Department of Water and Power
111 North Hope Street, Room 1044
Los Angeles, California 90012
Attn: Hal Messinger

Comments may also be faxed to Mr. Hal Messinger at: (213) 367-4710

If you require additional information, please contact Mr. Hal Messinger at (213) 367-1276.

Sincerely,

Charles C. Holloway

Charles Holloway
Manager of Environmental Planning and Assessment
Los Angeles Department of Water and Power

Initial Study

for

Tujunga Spreading Grounds Enhancement Project

Los Angeles Department of Water and Power
Environmental Affairs
111 North Hope Street, Room 1044
Los Angeles, CA 90012

February 2012

CITY OF LOS ANGELES

OFFICE OF THE CITY CLERK ROOM 395
CITY HALL LOS ANGELES, CALIFORNIA 90012

CALIFORNIA ENVIRONMENTAL QUALITY ACT
INITIAL STUDY AND CHECKLIST

(ARTICLE IV – CITY CEQA GUIDELINES)

LEAD CITY AGENCY: City of Los Angeles Department of Water and Power 111 North Hope Street Los Angeles, CA 90012	**COUNCIL DISTRICT(S):** 6	**DATE:** February 9, 2012
PROJECT TITLE/NUMBER: Tujunga Spreading Grounds Enhancement Project / Number: N/A		**CASE NUMBER:** N/A
PREVIOUS ACTIONS CASE NUMBER: None		
PROJECT DESCRIPTION: The proposed enhancement project for Tujunga Spreading Grounds (TSG) will alter the current intake facility to capture low flows; create a treatment area for the low flows; install two new intake facilities to capture high flows from the Tujunga Wash and Pacoima Wash Diversion Channels; install devices to prevent widespread distribution of trash within the TSG; reactivate, deepen and/or combine basins to increase the facility's storage and recharge capacity; install new inter-basin flow controls; and install telemetry on all diversion facilities. The objective of the Tujunga Spreading Grounds Enhancement Project (project) is to increase stormwater recharge into the San Fernando Groundwater Basin through enhancement and operation of the TSG facility.		
PROJECT LOCATION: The LADWP TSG facility is located at 34° 13' 39" N and -118° 24' 54" W, adjacent to the Sheldon-Arleta Landfill in the City of Los Angeles, Los Angeles County. The TSG is located approximately 17 miles northwest of downtown Los Angeles in the northeastern portion of the San Fernando Valley at the intersection of Roscoe Boulevard and Sheldon Street.		
PLANNING DISTRICT: Sun Valley - La Tuna Canyon	**STATUS:** ☐ **PRELIMINARY** ☐ **PROPOSED _______________** ☐ **ADOPTED (Date): _______________**	
EXISTING ZONING: OS-1XL, Open Space (City of Los Angeles)	**MAX. DENSITY ZONING:** N/A	☐ **DOES CONFORM TO PLAN**
PLANNED LAND USE AND ZONE: Open Space (City of Los Angeles)	**MAX. DENSITY PLAN:** N/A	☐ **DOES NOT CONFORM TO PLAN**
SURROUNDING LAND USES: Open Space, Residential, Commercial, School	**PROJECT DESNITY:** N/A	☐ **NO DISTRICT PLAN**

CEQA Initial Study

Tujunga Spreading Grounds Enhancement Project

February 2012

General Manager
Ronald O. Nichols

Senior Assistant General Manager – Water System
James B. McDaniel

Manager, Watershed Management Group
Andy A. Niknafs

Director of Environmental Affairs
Mark J. Sedlacek

Manager of Environmental Planning and Assessment
Charles C. Holloway

Prepared by:

Los Angeles Department of Water and Power
111 North Hope Street, Room 1044
Los Angeles, CA 90012

Technical Assistance Provided by:

MWH Americas, Inc.
618 Michillinda Avenue, Suite 200
Arcadia, California 91007

Los Angeles Department of Water and Power

Table of Contents

Section Name **Page Number**

Section 1 Project and Agency Information.................................1-1
1.1 Project Title and Lead Agency.................................1-1
1.2 Project Background and Objectives.................................1-1
  1.2.1 Project Background.................................1-1
  1.2.2 Project Objective.................................1-1
1.3 Project Location.................................1-2
1.4 Surrounding Land Uses and Setting.................................1-6
  1.4.1 Regional Setting and Surrounding Land Uses.................................1-6
  1.4.2 Existing On-Site Land Uses.................................1-8
1.5 Project Description.................................1-8
  1.5.1 Alternatives.................................1-9
  1.5.2 Construction Activities.................................1-10
1.6 Other Public Agencies Whose Review and/or Approval May Be Required.................................1-10

Section 2 Environmental Analysis.................................2-1
2.1 Environmental Factors Potentially Affected.................................2-1
2.2 Agency Determination.................................2-1
2.3 Environmental Checklist.................................2-2
  2.3.1 Aesthetics.................................2-2
  2.3.2 Agricultural and Forest Resources.................................2-3
  2.3.3 Air Quality.................................2-4
  2.3.4 Biological Resources.................................2-5
  2.3.5 Cultural Resources.................................2-7
  2.3.6 Geology and Soils.................................2-9
  2.3.7 Greenhouse Gas Emissions.................................2-11
  2.3.8 Hazards and Hazardous Materials.................................2-12
  2.3.9 Hydrology and Water Quality.................................2-17
  2.3.10 Land Use and Planning.................................2-20
  2.3.11 Mineral Resources.................................2-21
  2.3.12 Noise.................................2-21
  2.3.13 Population and Housing.................................2-23
  2.3.14 Public Services.................................2-24
  2.3.15 Recreation.................................2-25
  2.3.16 Transportation and Traffic.................................2-26
  2.3.17 Utilities and Service Systems.................................2-28
  2.3.18 Mandatory Findings of Significance.................................2-30

Section 3 References and Report Preparation.................................3-1
3.1 References.................................3-1
3.2 Preparers of the Initial Study.................................3-3
3.3 Acronyms and Abbreviations.................................3-4

List of Tables

Table Name **Page Number**

Table 1 Tujunga Spreading Grounds Proposed Basin Capacities 1-9
Table 2 Permits or Approvals Potentially Required 1-10
Table 3 Summary of Potential Stormwater BMPs 2-13
Table 4 Summary of Potential Hazardous Materials Sites in Close Proximity to the Project ... 2-14

List of Figures

Figure Name **Page Number**

Figure 1 Tujunga Spreading Grounds Enhancement Project Location 1-3
Figure 2 Existing Site Plan Tujunga Spreading Grounds 1-4
Figure 3 Site Plan Tujunga Spreading Grounds 1-5
Figure 4 San Fernando Valley TCE, PCE, NO_3 Contamination in Shallow Zone in 2006 1-7

Appendices

Appendix A	Tujunga Spreading Grounds Enhancement Project Biological Constraints Analysis and Results of Focused Plant Surveys for Basins 6 and 8 of the Tujunga Spreading Grounds Enhancement Project
Appendix B	Tujunga Spreading Grounds Enhancement Project Cultural Constraints Assessment

Section 1
Project and Agency Information

1.1 PROJECT TITLE AND LEAD AGENCY

Project Title:	Tujunga Spreading Grounds Enhancement Project
Lead Agency Name:	City of Los Angeles, Department of Water and Power
Lead Agency Address:	111 North Hope Street, Room 1044 Los Angeles, CA 90012
Contact Person:	Mr. Hal Messinger
Contact Phone Number:	(213) 367-1276
Project Sponsor's Name:	Same as Lead Agency
Project Sponsor's Address:	Same as Lead Agency

1.2 PROJECT BACKGROUND AND OBJECTIVES

1.2.1 Project Background

The Tujunga Spreading Grounds (TSG) are owned by the Los Angeles Department of Water and Power (LADWP) and have been operated by the Los Angeles County Flood Control District (District) since 1990. The District operates TSG by diverting stormwater from the Tujunga Wash Channel using a rubber dam and distributing it through the facility using a canal system and flashboard structures. TSG consists of shallow basins and associated facilities, and covers approximately 160 acres. Three of the basins, covering approximately 8 acres, are presently not in use. The maximum intake of stormwater at TSG is 250 cubic feet per second (cfs) and the approximate percolation rate is 140 cfs. The total storage volume within the facility is approximately 100 acre-feet.

TSG is located adjacent to the unlined Sheldon-Arleta Landfill. In the past, when TSG recharged large amounts of water, methane gas migrated from the landfill to local residential properties. This issue caused temporary restrictions to be placed on the stormwater facility by the City of Los Angeles Bureau of Sanitation (LABOS). Those restrictions limited the maximum intake flowrate to 50 cfs and removed several basins from service. Those restrictions were intended to prevent methane gas migration into nearby schools and communities during stormwater spreading operations. Phase I of the Cesar Chavez Project (completed in 2010) upgraded the landfill's methane gas extraction system and mitigated this issue, allowing for full operation of the spreading facilities.

1.2.2 Project Objective

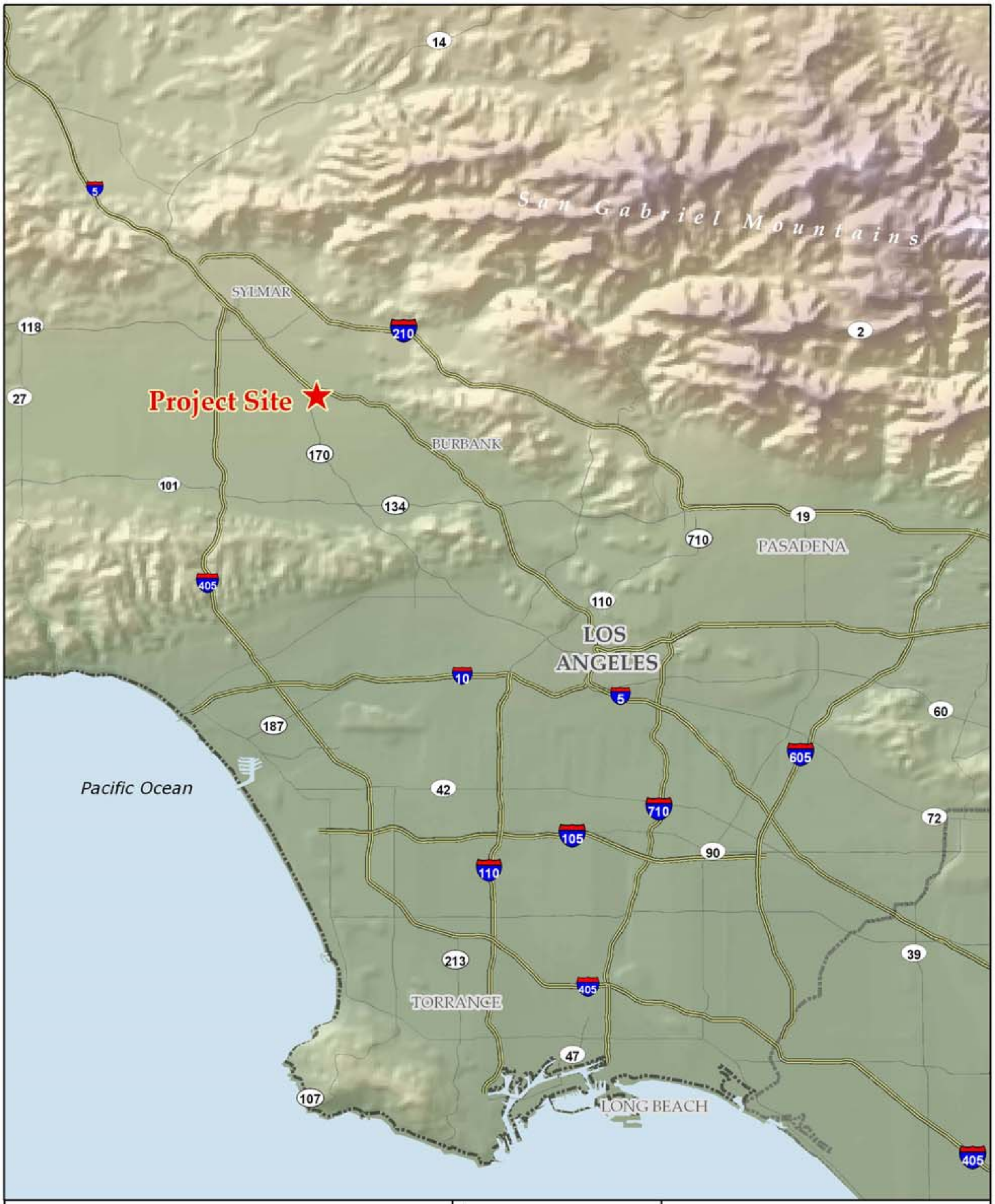
The objective of the Tujunga Spreading Grounds Enhancement Project (project) is to increase stormwater recharge into the San Fernando Groundwater Basin through enhancement and operation of the TSG facility. Due to increasing need for local water supplies in the Los Angeles area and subsequent demand on groundwater supplies, enhancement of the TSG facility will enable capture of a larger volume of stormwater than is currently possible.

This Initial Study (IS) has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq., and the State CEQA Guidelines, Title 14 California Code of Regulations (CCR) Section 15000 et seq. The IS serves to identify the site-specific impacts, evaluate their potential significance, and determine the appropriate document needed to comply with CEQA. For this project, LADWP has determined that based upon the analysis contained in this IS, an Environmental Impact Report (EIR) is the appropriate CEQA document.

1.3 PROJECT LOCATION

The TSG facility is located at latitude 34° 13' 39" N and longitude -118° 24' 54" W, adjacent to the Sheldon-Arleta Landfill in the City of Los Angeles, Los Angeles County. The TSG is located approximately 17 miles northwest of downtown Los Angeles in the northeastern portion of the San Fernando Valley at the intersection of Roscoe Boulevard and Sheldon Street. The proposed project enhancements will be within the boundary of the existing 160-acre facility.

The regional location of the project is shown on **Figure 1.** The current spreading grounds configuration is shown on **Figure 2** and the proposed configuration is shown on **Figure 3**.



Source: USGS, CaSil

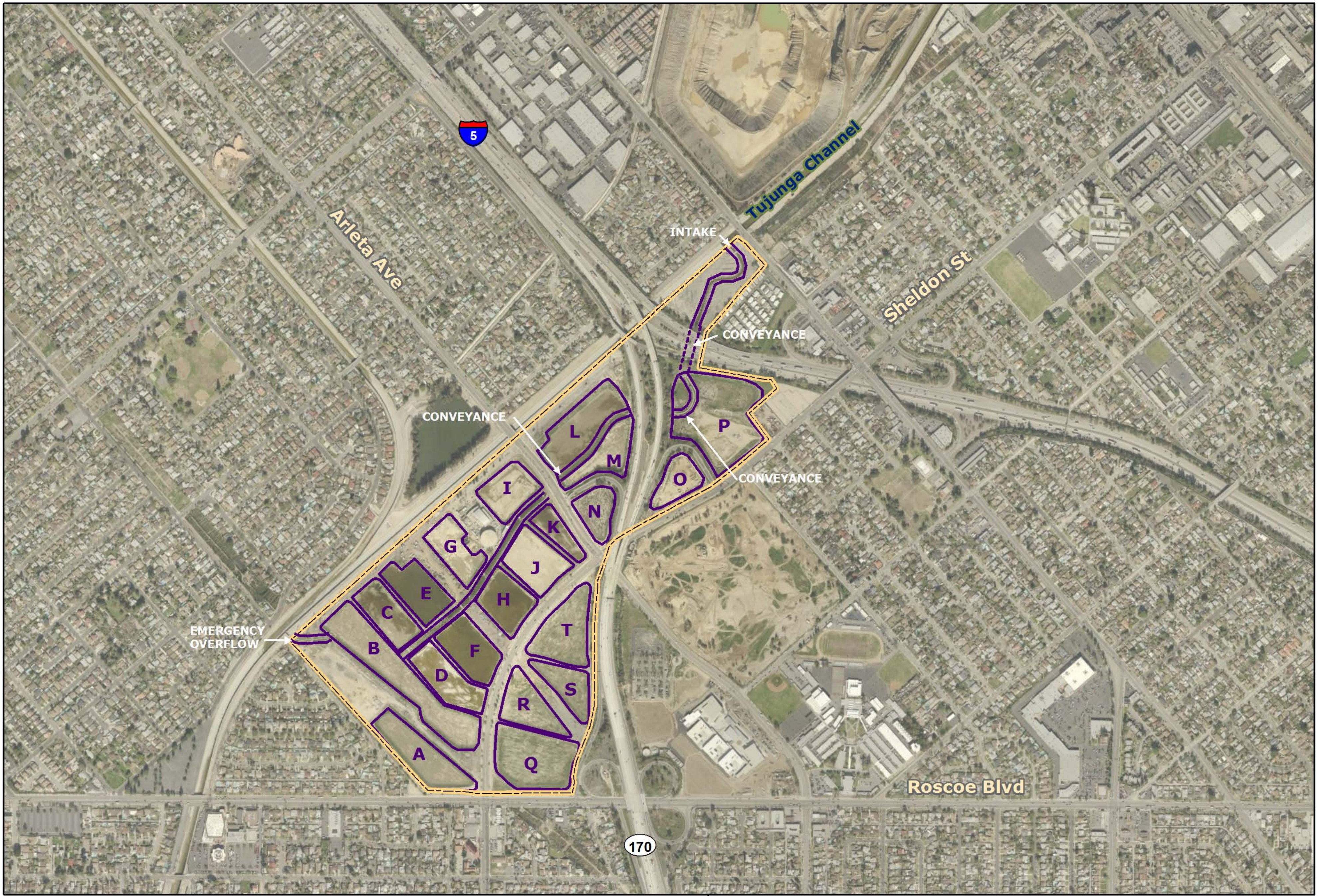
Document: TujungaLocation2.mxd

Date: February 5, 2010

Tujunga Spreading Grounds Enhancement Project Location

MWH

Figure 1



Key to Features

▭ Existing Spreading Grounds

▭ Project Site

═ Existing Stormwater Conveyance (above ground open channel)

┅ Existing Stormwater Conveyance (below ground pipe)

N

0 550 1,100 Feet

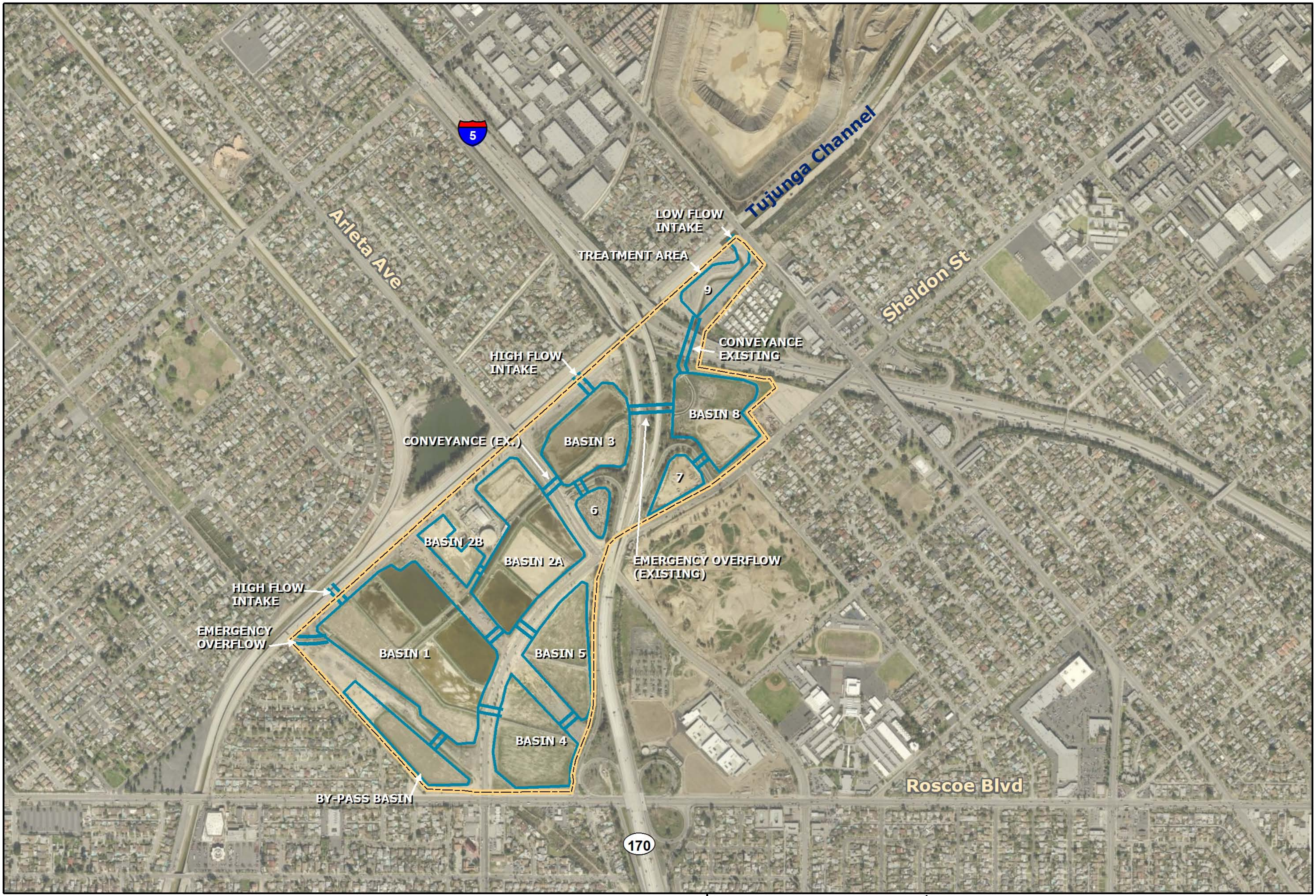
Document: TujungaConveyance.mxd

Date: February 2011

Existing Site Plan
Tujunga Spreading Grounds

MWH

Figure 2



Key to Features

▭ Proposed Spreading Grounds

═ Proposed Conveyance

▭ Project Site

Document: TujungaSpreadingBasins.mxd

Date: February 2011

Site Plan
Tujunga Spreading Grounds

MWH.

Figure 3

1.4 SURROUNDING LAND USES AND SETTING

1.4.1 Regional Setting and Surrounding Land Uses

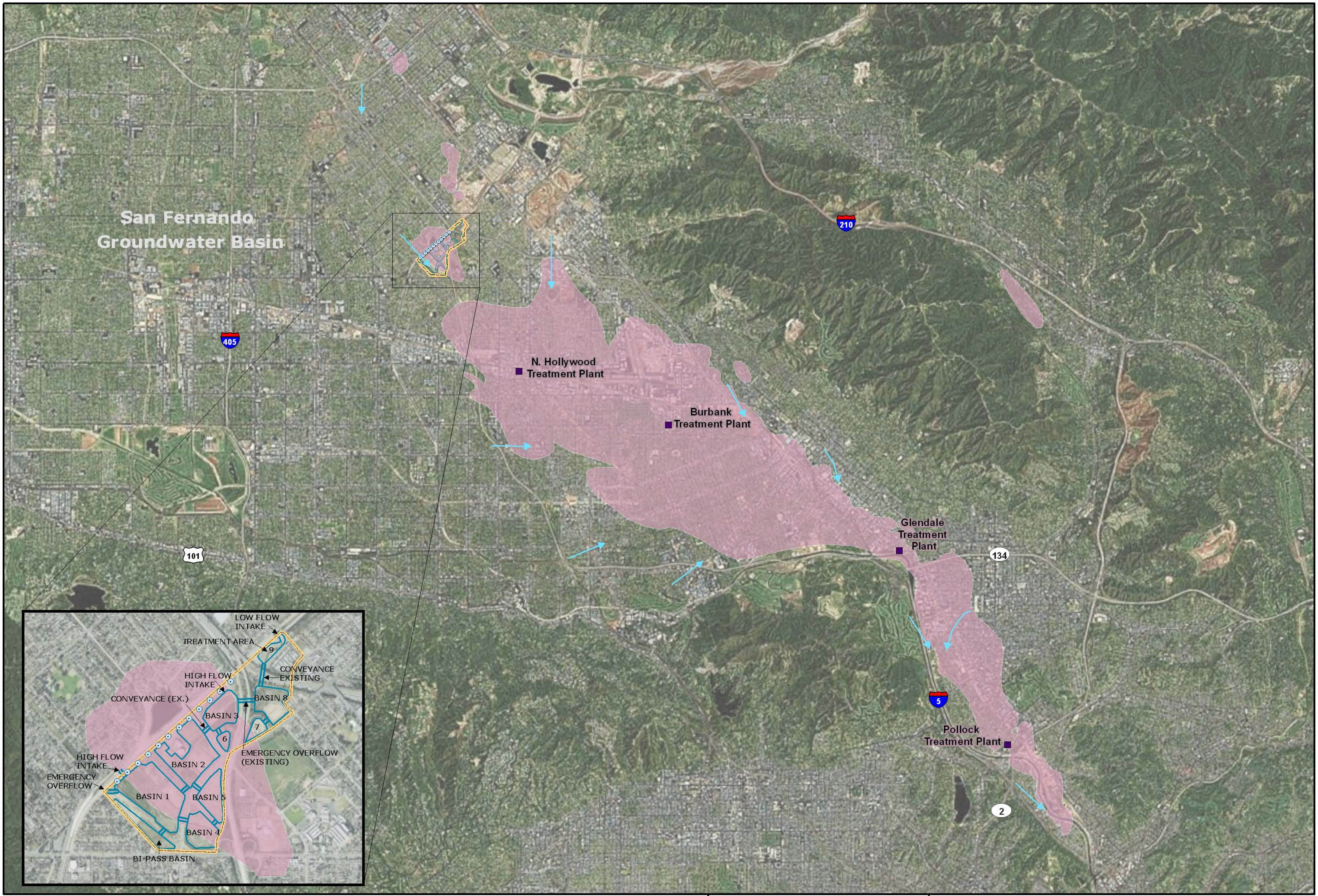
The project site is located south of the San Gabriel Mountains in an urbanized area of the City of Los Angeles (**Figure 1**). Stormwater flows from the largely undeveloped mountain areas flow first to Hansen Dam, where they are temporarily held, and then to the Pacoima and Tujunga Washes, which ultimately drain to the project site.

Historic land uses in the area contaminated the groundwater underneath the project site. Pollutants of concern are Trichloroethylene (TCE), Tetrachloroethylene (PCE), and Nitrate (NO_3). The extent of contamination as of 2006 is shown on **Figure 4** and discussed in more detail in Section 2.3.9. This contaminant plume is part of the San Fernando Valley Superfund Site, Zone 1 (North Hollywood Area), containing the North Hollywood Operable Unit (NHOU) and the Burbank Operable Unit (BOU). The contamination is managed through a monthly and quarterly monitoring program designed to assess extent and movement of the contamination plume. Groundwater is extracted from both operable units for treatment to remove contaminants and then the water is reintroduced into the aquifer. As of 2008, the existing North Hollywood groundwater pump and treat system has extracted and treated approximately 8 billion gallons of volatile organic compound (VOC)-contaminated groundwater to levels that are below state and federal maximum contaminant levels (MCLs) for drinking water. Similarly, as of 2008, the Burbank groundwater pump and treat system has extracted and treated approximately 36 billion gallons of VOC-contaminated groundwater to levels that are below state and federal MCLs for drinking water (EPA, 2008).

Freeways that provide access to the area are Interstate 5 (I-5, Golden State Freeway), State Highway 170 (SR-170, Hollywood Freeway), and Interstate 210 (I-210, Foothill Freeway). Major access roads from the freeways to the project site include Roscoe Boulevard, Arleta Avenue and Sheldon Street. The Burbank-Glendale-Pasadena Airport is approximately 2.5 miles to the southeast and Whiteman Airpark is located over 2 miles northwest of the project area.

Immediately adjacent land uses to TSG are low density residential development, small commercial operations such as restaurants, and a school (J. H. Francis Polytechnic High School located 0.5 miles southeast of the TSG site).

The upper portions of the watershed, 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 operated by LADWP), the Bradley Transfer Station and Materials Recycling Facility (operated by Waste Management, Inc.), 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 (operated by Los Angeles County Public Works, Flood Control Division) are located immediately northwest of the Valley Steam Plant. The Hansen Dam Golf Course, owned by the City of Los Angeles, is located at the north end of the watershed.



Key to Features

- ▨ Shallow Zone Contamination Plumes
- ☐ Project Site
- ☐ Proposed Spreading Basins
- ⊙ Location at Tujunga Wellfields
- ■ Operable Units

N 0 1 2 Miles

Document: TujungaPlume.mxd
Map Source: United States Environmental Protection Agency - 2006 San Fernando Valley Basin Groundwater Monitoring Program
Date: February 5, 2010

San Fernando Valley TCE, PCE, NO_3 Contamination in Shallow Zone in 2006

MWH

Figure 4

1.4.2 Existing On-Site Land Uses

The 160-acre project site (at the intersection of Roscoe Boulevard and Sheldon Street and under the I-5 / SR-170 freeway interchange) is currently developed as 160 acres of ponds and associated facilities such as intake structures and pumps, and operated by Los Angeles County as a spreading ground for the infiltration of captured stormwater from Tujunga and Pacoima Washes into the San Fernando groundwater basin. Access to on-site facilities is through a gated driveway off Arleta Avenue. On-site facilities are a small office building, water storage tank, water pumping station, ammonization station, and various intake and water conveyance structures, in addition to power line right-of-ways for Southern California Edison and LADWP. Access within the site is via unpaved roads or the tops of existing berms. Adjacent to the site along the flood control channel are the 12 wells that form the Tujunga Wellfield. These wells were originally installed to increase production from the San Fernando groundwater basin, but were later taken off-line and studies are being conducted to determine what treatment would be necessary to resume production.

1.5 PROJECT DESCRIPTION

The proposed enhancement project for TSG will alter the current intake facility to capture low flows; create a treatment area for the low flows; install two new intake facilities to capture high flows from the Tujunga Wash and Pacoima Wash Diversion Channels; install devices to prevent widespread distribution of trash within the TSG; reactivate, deepen and/or combine basins to increase the facility's storage and recharge capacity; install new inter-basin flow controls; and install telemetry on all diversion facilities. **Figure 3** shows proposed facilities. Modeling conducted by LADWP indicates that an average of 7,980 acre-feet per year will be captured and recharged with the enhanced facility.

The operation of the existing intake structure will be altered to allow only low flow through the intake and a trash rack will be installed. Immediately northeast of the I-5 / SR-170 interchange, an underground pipe conveys diverted stormwater to the spreading basins. Under the proposed project, this area will be improved to provide treatment prior to recharging the groundwater. Treated stormwater will pass under I-5 using the existing conveyance pipe and will be released into the reactivated basins located southeast of the freeway interchange. Water treatment will include attenuation to allow for settling of larger solids.

Two new intake structures will be built to take high flows from both the Tujunga and Pacoima Wash watersheds. The first new intake facility (high flow intake) will be located immediately southwest of the freeway interchange and will divert 250 cfs into the upper portion of the TSG. The second new intake facility will be located immediately downstream of the confluence of the Tujunga Wash and Pacoima Wash Diversion Channels and will divert a maximum of 200 cfs into the lower portion of the TSG from either channel.

The existing TSG Basins A through N and Q through T shown on **Figure 2** will be graded to accept water from either intake system. The basins will be interconnected using weir spillways and bypass gates. Basin A, the southernmost basin, will act as an overflow, or bypass basin, and will have a small sump pump to drain the basins, if necessary. In addition, Basin A will be expanded to the northwest to increase recharge and storage capacity and allow for a new emergency overflow facility to link with the existing overflow facility.

Basins O and P, which are the dormant, uppermost basins, located between I-5 and SR-170, will be reactivated, deepened, and able to accept low flows throughout the dry season, and may be able to accept flows during the wet season, depending on operational limitations. All basins west of SR-170 (Basins A through N and Q through T) will be deepened, and some combined, increasing storage and recharge capacity.

Inter-basin flashboard structures (which connect and allow water to flow between basins) will be replaced with modernized weir structures. All new diversion facilities will be automated; operation will be managed remotely from LADWP's on-site facility. Maintenance activities will include periodic vegetation removal and sediment removal from the base of the basins. Approximate final basin capacities are shown in **Table 1**.

Table 1
Tujunga Spreading Grounds Proposed Basin Capacities

Basin	Cubic Yards	Acre-Feet
By-pass	89,521	55.49
1	568,558	352.41
2	367,374	227.71
3	207,857	128.84
4	175,998	109.09
5	115,854	71.81
6	21,246	13.17
7	20,973	13.00
8	96,800	60.00
9	5,808	3.60

Additional Community Enhancements

Depending on the availability of space on site, compatibility with the project, and funding opportunities, recreational enhancements may be added to the facility. Potential compatible uses for the property are walking trails, outdoor classrooms and associated educational activities, and native habitat enhancement.

1.5.1 Alternatives

In addition to No Project, different options for the disposal of approximately 1.3 million cubic yards of excess soil to be generated by the project will be evaluated in the EIR. The potential for environmental impacts from removal of soil from the site is anticipated to be affected by the distance from the TSG site to the disposal location. At this time, it is estimated that soil disposal activities may occur for more than 1 year. Alternatives include soil disposal at local rock and asphalt facilities for onsite improvements and disposal at area landfills. Specific disposal locations, haul routes and access points for disposal will be identified and described in further detail in the EIR.

1.5.2 Construction Activities

Approximately 10 acres would be graded per day and active grading areas and unpaved roads would be watered a minimum of three times per day to reduce migration of dust from the project area. Haul trucks would be used to remove excess soil from the site. Construction equipment required for the project would include: pick-up trucks, bulldozers, excavators, graders, dump trucks and water trucks. Construction personnel would include a foremen, equipment operators, truck drivers and laborers.

1.6 OTHER PUBLIC AGENCIES WHOSE REVIEW AND/OR APPROVAL MAY BE REQUIRED

The following permits or approvals are potentially relevant to the proposed project (**Table 2**).

Table 2
Permits or Approvals Potentially Required

Agency	Potentially Required Permit or Approval
U.S. Army Corps of Engineers	Clean Water Act (CWA) 404 Permit, as applicable
California Department of Fish and Game	Streambed Alteration Agreement, as applicable
California Department of Transportation, District 7	Encroachment Permit for installation of conveyance facilities under State Highways Permit for use of heavy equipment on state highways Review of Traffic Management Plan
State Water Resources Control Board	General NPDES Stormwater Permit for Construction Activity
California Regional Water Quality Control Board, Los Angeles Region	Section 401 Water Quality Certification, as applicable
South Coast Air Quality Management District (SCAQMD)	Compliance with Rule 403
City of Los Angeles, Department of Recreation and Parks	Approval of design of new recreation features
City of Los Angeles Department of Transportation (LADOT)	Review of Traffic Management Plan

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
☐ Agricultural Resources
☒ Air Quality
☐ Biological Resources
☐ Cultural Resources
☐ Geology and Soils
☒ Hazards and Hazardous Materials
☐ Hydrology and Water Quality
☐ Land Use and Planning
☐ Mineral Resources
☒ Greenhouse Gas Emissions
☒ Noise
☐ Population and Housing
☐ Public Services
☐ Recreation
☒ 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.

Charles C. Holloway
Signature

2/9/2012
Date

Charles C. Holloway
Printed Name

Manager of Environmental Assessment
Title

2.3 ENVIRONMENTAL CHECKLIST

2.3.1 Aesthetics

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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) **No Impact** The project site is located in an urbanized area, and no significant visual resources (City of Los Angeles General Plan, 2001) exist that would be negatively impacted by project implementation. The project does not involve any structures of significant size that would have the potential to obstruct scenic vistas. Therefore, no impacts will occur.

b) **No Impact.** No designated or nominated State scenic highways are located in the vicinity of the project site (Caltrans, 2009) and therefore the project will not affect scenic views from any scenic highways. In addition, the project will not add new structures taller than existing facilities and will therefore not have the potential to obstruct views from roadways. Because there are no rock outcroppings or historic buildings on the project site and tree cover is negligible, none will be impacted; therefore there will be no impact on scenic resources.

c) **Less Than Significant Impact**. The project site is located in an urban area and is currently developed and operated as a spreading ground with the project providing enhancements to existing operations. During construction of the project, grading, soil transport and other construction activities may degrade the visual character and quality of the project site and neighboring access roads. Once the construction is completed, the project may improve the visual character and quality of the TSG project site and its surroundings through the potential addition of community enhancements. Because the negative aesthetic impacts associated with project construction are temporary and are in keeping with the aesthetic nature of the existing traffic patterns (for the gravel and landfill operations in the surrounding area), the impact will be less than significant.

d) **Less Than Significant Impact**. The project may involve installation of new sources of light for illuminating walking trails created as a part of the potential community enhancements included in the project. This lighting would be shielded away from adjacent properties. Also, it is likely that the trails would be closed at night. The new lighting is not expected to result in significant impacts to day or nighttime views. The project will not require materials that will add a new source of glare to the project area. Construction activities are not anticipated to require additional lighting because activities will 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 will be temporary and short-term and shielded away from adjacent properties. Project related impacts on light and glare are therefore less than significant.

2.3.2 Agricultural and Forest Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) 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), b), c), d), e) **No Impact**. The proposed project site is located in an urbanized area. The project site and potential soil disposal locations are not occupied by existing Farmland, Timberland or forest land as defined by the California Resources Agency (Public Resources Code, Sections 10213, 12220(g) and 4526), and are not located in the vicinity of existing agricultural operations. There is no agricultural zoning in the vicinity (City of Los Angeles Zoning Code effective December 7, 2009). In addition, the project does not contain any timberland zoned for Timberland Production as defined by Government Code section 51104(g). Moreover, the project actions would be limited to the existing TSG site, which has no agriculture, forest or timber resources. Similarly, none of the soil disposal locations being evaluated has these types of lands. Therefore, the project will not result in conversion of Farmland, timberland or forest land to other uses. Therefore, no impacts will occur.

2.3.3 Air Quality

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 emissions which exceed quantitative thresholds for ozone precursors)?	☒	☐	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☒	☐	☐	☐

Discussion:

a), b), c), d) and e) **Potentially Significant Impact**. Construction of the project will involve the use of heavy equipment that will generate exhaust pollutants and may create nuisance odors from idling equipment. Due to the nature of the project, the deepening and enhancement of the existing spreading grounds, a significant volume of excess material may be generated. This excess material will be moved off-site by truck for disposal. Due to the large volume of material to be moved (approximately 1.3 million cubic yards), the limited capacity of each truck and the limited ability of trucks to enter and exit the site, it is currently estimated that transport of this material may occur for more than 1 year. Because truck traffic in and around the site could continue for more than a year, air pollutant emissions may be potentially significant. Therefore, air quality impacts will be further evaluated in the EIR.

2.3.4 Biological Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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:

While the project site was highly disturbed during the construction of the existing spreading basins, and surrounding areas are fully developed as residential, commercial and transit routes, some ability to support habitat may remain or have developed since the end of previous construction efforts. A biological constraints survey was therefore conducted in 2009 (**Appendix A**). Sources used to identify significant biological resources that may be present at the site included special status plant and wildlife species lists published by the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Game's (CDFG) California Natural Diversity Database (CDFG, 2009), and the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2009). In addition, other biological studies conducted in the vicinity of the site were reviewed. All plant and wildlife species observed were recorded in field notes.

a) **No Impact**. Due to regular grounds maintenance, the site supports minimal vegetation; on-site plants are primarily non-native weedy (ruderal) species. Isolated native plants or small patches of native species are present in a few areas, generally limited to the basin banks. Basins 6 and 8 were the only areas on the site with sufficient native vegetation for the areas to be mapped separately from the disturbed areas. Of the 17 special status plant species recorded for the project vicinity, four species were determined to have the potential to occur in Basins 6 and 8: federally-listed Endangered Braunton's milk-vetch (*Astragalus brauntonii*), federally- and State-listed Endangered Nevin's barberry (*Berberis nevinii*), federally-listed Candidate and State-listed Endangered San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*), and federally and State-listed Endangered slender-horned spineflower (*Dodecahema leptoceras*). Therefore, focused botanical surveys were conducted in April 2010 (BonTerra Consulting, 2010) consistent with current CDFG protocols. During the course of the survey no special status plant species were observed.

Due to the disturbed nature of the site and its isolation from natural open space areas, wildlife use of the site is limited to birds and other highly mobile species, and those species adapted to urban environments. The open water habitats on the site are expected to attract a relatively large number and diversity of water birds, especially during migration and the winter season. Of the 26 special status wildlife species recorded for the project vicinity, six are State- or federally-listed as Threatened and/or Endangered: Santa Ana sucker (*Catostomus santaanae*), Sierra Madre yellow-legged frog (*Rana muscosa*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), southwestern willow flycatcher (*Empidonax traillii extimus*), least Bell's vireo (*Vireo bellii pusillus*), and coastal California gnatcatcher (*Polioptila californica californica*). The site does not provide suitable habitat for the Santa Ana sucker and Sierra Madre yellow-legged frogs since they are found in stream systems with natural habitats; therefore, they are not expected to occur. The western yellow billed cuckoo, southwestern willow flycatcher, and least Bell's vireo nest in riparian habitats, which are lacking on the site; therefore, the project site does not provide suitable habitat for these three bird species and they are not expected to occur. Coastal California gnatcatcher occupies alluvial sage scrub and coastal sage scrub habitats; however, the amount of potentially suitable vegetation on the site is not considered substantial enough to support this species. Since there are no open space areas in the immediate vicinity of the site that could provide potentially suitable habitat, the limited amount of alluvial sage scrub and coastal sage scrub habitats on the site is not sufficient to support the coastal California gnatcatcher and it is not expected to occur.

Since special status plant species are not present on the project site and since sufficient suitable habitat for special status wildlife species is not present, the proposed project will not impact special status species.

b) and c) **Less Than Significant Impact**. The project site includes isolated areas of riparian vegetation. Additionally, alluvial sage scrub and California buckwheat scrub occur in basins 6 and 8. Due to the isolation of the TSG from natural open space areas (it is surrounded by urban development), and limited extent of these vegetation types, temporary disturbance during construction will not constitute a substantial impact to riparian habitat or other sensitive natural community identified by CDFG and/or USFWS. Consultation with applicable agencies will be conducted for the installation and modification of the intake structures in Tujunga and Pacoima Washes. The intake structures will be installed in existing concrete channels where no vegetation currently exists. Therefore, the impact is less than significant.

d) **Less Than Significant Impact**. Maintenance activities including vegetation control are on-going at the project site. The proposed enhancement project will temporarily increase activity and equipment use at the site, but the disturbance to on-site wildlife (noise and vehicle traffic) will be of a similar nature. The project will not interfere with migration patterns of any fish species as the ponds are isolated from rivers or streams, contain water only periodically, and currently are not used by migrating fish. Non-native western mosquito fish (*Gambusia affinis*), released to control mosquitoes, is the only fish species expected to occur at the project site. Bird use of the site during migration is expected. Temporary effects on bird migration patterns may occur during the construction phase of the project. Since the impact is temporary and since construction activity will involve a few basins at a time (and thus not disturb the entire site at once), the impact is therefore less than significant. Project operation will increase the volume of water percolated at the site, thus expanding open water habitat for migratory birds; the effect is beneficial.

e) **No Impact**. The project will not conflict with the City's Native Tree Protection Ordinance (City of Los Angeles, 2006). The Los Angeles Municipal Code (Section 1.Subdivision 12 of Subsection A of Section 12.21; Ordinance 177404) provides for protection of native trees of four types: (1) oaks other than Scrub Oak (*Quercus dumosa*), (2) Southern California Black Walnut (*Juglans californica* var. *californica*), (3) Western Sycamore (*Platanus racemosa*), and (4) California Bay (*Umbellularia californica*). Based on the results of the biological constraints survey (Appendix A) conducted for the project, no species protected under the City's Native Tree Protection Ordinance occur on the project site. Therefore, since the project would not conflict with any local policies or ordinances protecting biological resources, no impact would occur.

f) **No Impact**. The project site does not fall within the boundaries of any Habitat Conservation Plan, Significant Ecological Area (Appendix A) or Natural Community Conservation Plan (CDFG, 2009), so there will be no impact.

2.3.5 Cultural Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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) **No Impact**. A Cultural Resources Records Search and Field Reconnaissance were conducted by BonTerra Consulting (March 2009) (**Appendix B**). Those studies concluded that there were no historic resources in the project area and the nearest historic resource, in the Panorama City Historic District, was 1 mile west of the project area. Since there are no historic resources within or adjacent to the project area, there will be no impact.

b), c) and d) **Less than Significant Impact with Mitigation Incorporated**. An archaeological/historic records search conducted on February 2, 2009 at the South Central Coastal Information Center (SCCIC), California State University, Fullerton indicated that no cultural resources sites have been previously recorded and/or evaluated on the project site. The Panorama City Historic District is recorded approximately 1 mile west of the project area.

A paleontological records search requested from the Los Angeles County Museum Vertebrate Paleontology Department indicated that no vertebrate fossil localities are known on the project area, but there are fossil localities nearby from the same or similar sedimentary units that occur in the project area. The entire project area is underlain by surficial deposits of younger Quaternary Alluvium, derived primarily as fluvial deposits from Tujunga Wash that flows through the project area. These units do not typically contain significant vertebrate fossils. But younger alluvial units are typically underlain by older Quaternary deposits that may contain significant fossils.

The project site was previously disturbed during excavation, grading, and construction of the existing spreading grounds. The project site does not include any known cemeteries. Construction of the proposed project will involve up to an additional 18 feet of excavation and therefore may have an impact on archaeological resources, paleontological resources, and/or human remains if any exist in previously unimpacted deposits below the existing basins, although a records search conducted did not reveal any known resources in the project area. Since there is the possibility of disturbing resources in previously unimpacted deposits, construction personnel will receive cultural resources training by a qualified archaeologist to recognize signs of potential archaeological and paleontological resources. Any resources encountered during excavation will be treated appropriately under the guidance of a qualified archaeologist/paleontologist; therefore, there will be a less than significant impact with incorporation of mitigation measures CR-1 and CR-2.

Mitigation Measures

CR-1: Construction personnel and staff shall be given training by a qualified archaeologist on the identification of possible archaeological and paleontological resources that may be present in the area. In the event potential archaeological or paleontological resources are encountered during excavation, work in the vicinity of the discovery shall halt until appropriate treatment of the resource is determined by a qualified archaeologist/paleontologist in accordance with the provisions of CEQA Section 15064.5.

CR-2: If human remains are encountered during project activities, work within 25 feet of the discovery shall be redirected and the County Coroner notified immediately. At the same time, an archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. Project personnel shall not collect or move any human remains and associated materials. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

2.3.6 Geology and Soils

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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) **Less Than Significant Impact**. According to the California Geological Survey (2003) the project site is 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 (located 1.5 miles south from the project site). The project does not involve construction of habitable structures or other large aboveground structures and therefore will not result in a substantial increase in the risk of damage from fault rupture. Damage to basin berms or other on-site facilities from seismic activity would be repaired as necessary. Therefore, the impact will be less than significant.

a)-ii) **Less Than Significant Impact**. Located in a seismically active area, the project site 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, as applicable, 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, the impact will be less than significant.

a)-iii) **Less Than Significant Impact**. Liquefaction refers to loose, saturated sand or gravel deposits that lose their load supporting capability when subjected to intense shaking. The soils underlying the TSG area consist primarily of sands and gravels with intermittent layers and lenses of clays and silts (Geosyntec, 2009). Review of the State of California Seismic Hazard Zones Map for the Van Nuys Quadrangle (California Department of Conservation, 2009) indicates none of the project site is located in an area considered susceptible to liquefaction. In addition, the historic groundwater level is approximately 200 feet below ground surface (LADWP internal communication, 2008). However, recharge of additional stormwater in the basins will saturate soils below the TSG intermittently when basins are full. However, since the project site and surrounding area are not located in an area considered susceptible to liquefaction, the impact is less than significant.

a)-iv) **No Impact**. The State of California Seismic Hazard Zones Map for the Van Nuys Quadrangle (California Department of Conservation, 2009) indicates that the project site is not in an area susceptible to earthquake-induced landslides; therefore, there will be no impact.

b) **Less Than Significant Impact**. During construction of the project, on-site 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 not be subject to substantial erosion or loss of topsoil because unpaved areas would be compacted to ensure stability for project uses. Therefore, project-related effects on soil erosion would be limited to temporary construction impacts. Standard erosion control measures will be defined in the Construction Stormwater Pollution Prevention Plan (SWPPP) prepared for the project in compliance with the General NPDES Stormwater Permit for Construction Activity. Therefore, the impact will be less than significant.

c) **Less Than Significant Impact**. As discussed above in items a)-iii) and a)-iv), although the proposed project site is located in a seismically active area, the site is not known for unstable soils related to liquefaction and/or landslides nor will the project make the area more unstable. Therefore, the impact will be less than significant.

d) **No Impact**. The proposed project involves continuation of the existing activity of infiltration of stormwater into the ground for groundwater recharge. To date, no effects from expansive soils have been reported. In addition, 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. Therefore, there will be no impact.

e) **No Impact**. The project site is served by a public sewer system. No septic tanks or alternative wastewater disposal systems will be required for the project. Therefore, no impacts will occur.

2.3.7 Greenhouse Gas Emissions

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☒	☐	☐	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☒	☐	☐	☐

Discussion:

a) and b) **Potentially Significant Impact**. Because the project involves a significant amount of trucking of material from the TSG site for disposal, a process that could take more than 1 year, and will involve diesel-fueled trucks, the project could generate a significant amount of greenhouse gases that may affect the environment or be in conflict with a policy, plan or regulation aimed at reducing greenhouse gas emissions. Once completed, the spreading basins would not emit greenhouse gases, and emissions from maintenance vehicles would be minor. Because of the potential for production of significant amounts of greenhouse gases during construction, this effect is potentially significant and will be evaluated in the EIR. The EIR will include a brief evaluation of impacts to global climate change due to emissions of greenhouse gases from construction equipment and trucks transporting materials. The analysis will be conducted in accordance with the recommendations set forth by the California Office of Planning and Research, the SCAQMD, and guidance from the California Air Pollution Control Officers' Association (CAPCOA) on inclusion of greenhouse gas evaluations in CEQA documents.

2.3.8 Hazards and Hazardous Materials

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐
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) **Less Than Significant Impact**. The proposed project will not cause or contribute to a change in hazardous material transport or use in the project area and the nearest existing school is more than one-quarter mile from the project site. There are no known schools proposed within one-quarter mile of the project site. No hazardous chemicals will be generated by the project. Construction activities will require the use of hazardous substances, such as fuels, oils and lubricants. Improper use or storage of these materials could result in leaks or spills, and could contaminate runoff. However, best management practices (BMPs) will be implemented during construction as defined in the

SWPPP prepared for the project in compliance with the General NPDES Stormwater Permit for Construction Activity (Order 2009-0009-DWQ). The contractor will be required to implement temporary BMPs to prevent the migration of hazardous materials from the site in contaminated runoff during construction and to clean up any spills. **Table 3** provides a summary of potential construction BMPs. Therefore, impacts relative to construction-related hazardous materials will be less than significant.

Table 3
Summary of Potential Stormwater BMPs

Best Management Practices for the Protection of Stormwater Quality During Construction
Housekeeping Measures • Conduct an inventory of products used or expected to be used • Cover and/or berm loose stockpiled construction materials • Store chemicals in watertight containers
Employee Training • Brief staff on the importance of preventing stormwater pollution • Have staff review SWPPP • Conduct refresher training during the wet season, if relevant • Document training
Erosion and Sediment Controls • Establish and maintain effective perimeter control • Stabilize construction entrances and exits to control sediment – inspect ingress and egress points daily, and maintain as necessary • Control dust during earthwork • Place sandbags or other barriers to direct stormwater flow to suitable basins
Spill Prevention and Control • Inspect construction equipment for leaking • Use drip pans until equipment can be repaired • Cleanup spills immediately – remove adsorbent promptly • Notify the proper entities in the event of a spill
Concrete Truck Washing Waste • Provide containment for capture of wash water • Maintain containment area
Hazardous Waters Management and Disposal • Store hazardous wastes (including fuels) in covered, labeled containers
Materials Handling and Storage • Establish a designated area for hazardous materials (including fuels) • Berm, cover, and/or contain the storage area as necessary to prevent materials from leaking or spilling • Store the minimum volume of hazardous materials necessary for the work
Vehicle and Equipment Maintenance, Repair, and Storage • Inspect vehicles and equipment regularly • Conduct maintenance as necessary • Designate areas for storage – where fluids can be captured and disposed of properly
Scheduling • Avoid work during storm events • Stabilize work areas prior to predicted storm events

d) **Less Than Significant Impact**. 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." The sites on the Cortese List are designated by the State Water Resources Control Board, the Integrated Waste Management Board, and the Department of Toxic Substances Control.

A records search of relevant federal, state, and local environmental regulatory databases, including the Cortese List, was conducted for the Project site by Environmental Data Resources, Inc. (EDR, 2009). The records search meets the requirements of the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments. Within a 1-mile radius of the approximate center of the project site, 142 sites listed on 29 hazardous materials databases were identified. Of those, eight sites were located in close proximity to the proposed construction area (**Table 4).**

- Sites 1, 2, and 3 are listed on the databases as small or large quantity generators of hazardous materials with no violations found. In addition, Site 4 is listed as a transporter of hazardous waste with no violations found. With a lack of violations and no recent inclusion on a list of contaminated sites, impacts to Sites 1, 2, 3, and 4 relative to potential groundwater or soil contamination will be less than significant.

Table 4
Summary of Potential Hazardous Materials Sites in Close Proximity to the Project

Site Name / Address		Database	Status
1	Tujunga Wells / LADWP 8801 Arleta Ave.	RCRA-LQG, FINDS, HAZNET	Large quantity generator; no violations found
2	Ogden Power Pacific Sheldon 12730 Sheldon St.	RCRA-SQG, FINDS	Small quantity generator; no violations found
3	Fischer Trucking 9100 Laurel Canyon Blvd.	RCRA-SQG, FINDS	Small quantity generator; no violations found
4	P Raymundo Trucking 9134 Morehart Ave.	FINDS, RCRA-NonGen	Transports hazardous waste; no violations found
5	San Fernando Valley Area (Area 3) Glorietta Wellfield Area	CERCLIS, FINDS, NPL, Cortese, Delisted NPL, ROD, US ENG CONTROLS, ENVIROSTOR, HIST Cal-Sites	Delisted from NPL in 2004; EPA continues to monitor four times per year
6	Shell Service Station/ Roscoe Shell Market 12858 Roscoe Blvd.	HAZNET, Cortese, HIST UST, LUST, CA FID UST, UST, SWEEPS UST, RCRA-SQG, FINDS	Leaking UST; contaminated soil; case closed in 2001 and open for verification monitoring as of 2008. Small quantity generator; no violations found. Historical UST.
7	Helo's Exxon 12904 Roscoe Blvd.	HAZNET, CA FID UST, Cortese, LUST, UST, SWEEPS UST, SWRCY	Leaking UST; contaminated soil; case closed. Inactive recycler.
8	Mobil Service Station 12800 Roscoe Blvd.	CA FID UST, HIST UST	Historical UST

Source: EDR 2009
Notes:
CA FID UST - California Facility Inventory Database
FINDS – Facility Index System
SWEEPS - Statewide Environmental Evaluation and Planning System
HAZNET - Data extracted from hazardous waste manifests received annually by DTSC
UST - Underground Storage Tank Database
SWRCY - Listing of recycling facilities in California
RCRA-LQG - Resource Conservation and Recovery Act Large Quantity Generators
RCRA-SQG - Resource Conservation and Recovery Act Small Quantity Generators
FINDS - Facility Index System
HIST UST - Historical UST Registered Database

- Site 5 was listed on databases indicating previous groundwater contamination. Site 5 encompasses San Fernando Valley (SFV) Area 3 under the U.S. Environmental Protection Agency's (EPA) Superfund program that identifies, investigates and cleans up uncontrolled or abandoned hazardous waste sites throughout the U.S. In 1983, pursuant to California Assembly Bill 1803, wells within the SFV were sampled and results of the sampling indicated concentrations of volatile organic compounds (VOCs) in excess of Safe Drinking Water Act maximum contaminant levels (MCL) in several water supply production wells in the basin. In 1986, the State of California requested that the EPA designate four areas within the SFV as National Priorities List (NPL) sites, including Area 3. EPA subsequently entered into a cooperative agreement with LADWP to conduct a Remedial Investigation (RI) of the SFV, which was completed in 1992. EPA deleted this site from the NPL list on October 12, 2004, and has since continued to conduct groundwater sampling in the Verdugo Basin (located adjacent to the San Fernando basin) four times a year (EDR, 2009; EPA, 2008).

- Site 6 is listed as a small quantity generator with no violations found. In addition, Site 6 is listed on databases indicating soil contamination by gasoline. The site underwent remediation (abatement method not recorded) and was closed in 2001; closure of the case was confirmed by the RWQCB-LA Region's Underground Storage Tank (UST) division on December 17, 2009 (Y. Rong, pers. comm., 2009). The EDR records search indicated that the site is undergoing verification monitoring as of January 2008. The northern property boundary of Site 6 is located approximately 185 feet south of the southernmost portion of Basin 4, and the elevation of Site 6 is approximately 5 feet lower than Basin 4. Therefore, given the distance between Site 6 and Basin 4 as well as the topography of the immediate area, it is not likely that contaminated soil related to Site 6 would be encountered during project construction. Therefore, impacts relative to potential groundwater or soil contamination will be less than significant.

- Site 7 was also listed as having previous soil contamination by gasoline; however, the site underwent remediation (abatement method not recorded) and the case was closed in 2001. Site 7 is also listed as an inactive recycling facility. Therefore, since the site was remediated and since the site no longer functions as an active recycler, potential impacts involving groundwater or soil contamination will be less than significant.

- Site 8 is listed as an historical UST. This site is not included on a list of contaminated sites and, accordingly, is not considered to pose a threat to the soil or groundwater beneath the project site. Therefore, impacts related to Site 8 will be less than significant.

Given the above analysis, impacts related to hazardous materials in the soil or groundwater beneath the site will be less than significant.

e) **Less Than Significant Impact**. The Whiteman Airpark is located over 2 miles north and the Burbank-Glendale-Pasadena Airport is approximately 2.5 miles southeast of the project area. 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 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. Therefore, this impact will be less than significant.

Bird Air Strike Hazard (BASH) is a consideration for all airports. The Burbank-Glendale-Pasadena Airport reported 16 bird strikes in the first half of 2009 (LA Daily News, 2010), and 218 bird air strikes between 1990 and 2008 (City Data, 2009a). These involved only rock pigeons and unidentified small birds and no damage occurred to planes. Whiteman Airport reported eight bird airstrikes between 1995 and 2005, also involving pigeons and no damage to planes (City Data, 2009b). Bird habitat near airports can potentially increase the BASH. However, no connection to TSG operations was noted in the past relative to BASH. In addition, numbers of pigeons and small birds would not increase at TSG with the project. Large birds such as Canada geese would not be attracted to the ponds because of the small pond size, and the geese do not breed in this part of the valley (M. Blain, pers. comm., 2010). Therefore, implementation of the project is not anticipated to increase hazards to airport operations from BASH. The impact is therefore considered to be less than significant.

f) **No Impact.** The project site is not located within 2 miles of a private airstrip (Thomas Guide, 2009). Therefore, no impacts will occur.

g) **Potentially Significant Impact**. During construction of the project, temporary lane or road closures may be necessary for installation of project facilities and transport of materials. Due to the nature of the project, the deepening and enhancement of the existing spreading grounds, a significant volume of excess soil may be generated. This excess soil will need to be moved off-site by truck for disposal. Due to the large volume of soil to be moved (approximately 1.3 million cubic yards), the limited capacity of each truck and the limited ability of trucks to enter and exit the site, it is estimated that transport of this material could take more than 1 year. Restricted access to properties in the vicinity of the construction site may be more than temporary, and would be addressed by advanced notification of local emergency service providers such as the City of Los Angeles Fire Department, City of Los Angeles Police Department and local ambulance services. 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. However, depending on the final soil disposal option selected, truck trips related to project construction may occur over 1 year or more. Therefore, project-related impacts on emergency response plans or emergency evacuation plans may be potentially significant. Impacts to emergency response and evacuation will be evaluated in the EIR.

h) **No Impact**. The project site is located within an urban area, and no wildlands are located onsite or in the vicinity. Therefore, no impacts will occur relative to wildland fires.

2.3.9 Hydrology and Water Quality

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
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:

The topography of the project area is characterized by a moderate slope with drainage flowing from north to south. Ground surface elevation ranges from approximately 1,000 feet above mean sea level at Hansen Dam to 800 feet above mean sea level near Roscoe Blvd. Although much of the local area 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 project is located within the San Fernando Valley Groundwater Basin (Basin). The Basin, which provides a significant portion of Los Angeles' drinking water, is an unconfined alluvial aquifer. As a result, groundwater quality has been impacted by various industrial activities (**Figure 4**). Since the mid 1980s, the Basin has been subdivided into four discrete Superfund sites for cleanup of VOCs, including trichloroethylene (TCE) and perchloroethylene (PCE), and nitrate (NO_3). EPA is responsible for ongoing cleanup and monitoring activities. The project is expected to have a beneficial effect on the contamination in the basin immediately underneath the project site as the increased recharge of clean water will dilute concentrations of contaminants. The Water Quality Control Plan (Basin Plan) for the Los Angeles Region (LARWQCB 1994) identifies Tujunga Wash as having the potential to support Municipal and Domestic Water Supply, Warm Freshwater Habitat, Cold Freshwater Habitat and Wildlife Habitat beneficial uses as well as supporting Groundwater Recharge and Non-Contact Water Recreation intermittently. The Basin Plan identifies the Pacoima Wash as having the potential to support the beneficial use of Municipal and Domestic Water Supply while currently support the beneficial uses of Groundwater Recharge, Non-contact Water Recreation, Warm Freshwater Habitat, Wildlife Habitat and Rare, Threatened or Endangered Species Habitat. Specific Water Quality Objectives are included in the Basin Plan and this project is consistent with Basin Plan objectives in that it enhances the Groundwater Recharge beneficial use for both the Tujunga and Pacoima Washes.

a) **Less Than Significant Impact**. Operation of the proposed project would not include discharges of waste. The project involves collection, retention, and infiltration of high-quality stormwater that originates from a largely undeveloped watershed in the Angeles National Forest. The project will result in a reduction of stormwater runoff which subsequently becomes polluted from mixing with urban runoff and enters the Los Angeles River, and therefore is expected to have a beneficial impact on surface water quality. Additionally, the project includes stormwater attenuation to improve quality prior to recharge. Standard stormwater management efforts during construction (defined in the construction SWPPP) will address site run-off during construction and construction of the new and modified intake structures will be conducted only during dry conditions. **Table 3** provides a summary of potential construction BMPs. Therefore, the impact on water quality standards or waste discharge requirements will be less than significant.

b) **No Impact**. The project involves collection, retention, and infiltration of approximately 8,000 acre-feet per year (on average) of high quality stormwater that originates from a largely undeveloped watershed in the Angeles National Forest. Long term operation of the project would enhance groundwater supplies by increasing groundwater recharge. Therefore, the project will have no impact related to groundwater depletion.

c), d), e) **Less Than Significant Impact**. The project involves modification to existing spreading basins which would modify drainage patterns within the boundaries of the project site but would not result in changes in drainage patterns off-site nor would it contribute to additional erosion off-site. Aside from modification of the intake structures in the Tujunga Wash Channel, the project would not alter any stream or river or increase flooding. The project is designed to capture additional stormwater, therefore having the beneficial effect of reducing runoff. Because the project is designed to capture stormwater it will not be a cause of on-site or off-site flooding and may have the beneficial effect of reducing flooding off-site. Therefore, the impact will be less than significant.

f) **Less Than Significant Impact**. Recharge of groundwater in the project area may have an impact on the existing VOCs and nitrate contamination plume in the vicinity of the Tujunga Wellfield operated by LADWP. The Tujunga Wellfield consists of 12 potable water wells located immediately northwest of the recharge facilities. The expected impact of increased stormwater infiltration would be 1) an increase in groundwater elevation and mounded groundwater gradient away from the facilities, and 2) a dilution of the concentration of existing contaminants. Since the soils below the TSG are not contaminated, no increase in contaminant levels in groundwater would occur. Therefore, the project is expected to increase aquifer volume and raise the local groundwater table level. This will be a beneficial effect with respect to groundwater supply and water quality. Therefore, the impact will be less than significant.

g) **No Impact**. The project area is located within the 100-year floodplain of Tujunga Wash (FEMA, 2008). However, the project will place no housing or other habitable structures in a 100-year flood area. Therefore, no impacts will occur.

h) **Less Than Significant Impact**. The project is located within the 100-year floodplain of Tujunga Wash. The project involves modification of existing facilities for the purpose of capturing stormwater runoff. The modifications will be designed to collect, retain, and infiltrate stormwater runoff, and therefore would impede or redirect flood flows in a controlled manner. Therefore, the project is expected to have a beneficial effect with respect to flooding. The impact will be less than significant.

i) and j) **Less Than Significant Impact**. The project area is located approximately 15 miles inland from the Pacific Ocean, and therefore there is no risk of tsunami (seismic sea waves) in the area. No mudflow hazards have been identified for the project area as it is not adjacent to a hillside that could be adversely affected by a rain event. Hansen Dam and Lake are located approximately 3 miles north of the project area. The project area could be subject to inundation in case of failure of Hansen Dam or a seiche at Hansen Lake. This risk would not be different from the current level of risk. In addition, 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 failure of Hansen Dam. Therefore, the impact will be less than significant.

2.3.10 Land Use and Planning

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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) **No Impact.** 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. Therefore, no impacts will occur.

b) **No Impact**. 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 because the area is designated Open Space in City Zoning and planned use is the same as existing (City of Los Angeles Zoning Code effective December 7, 2009). Therefore, no impacts will occur.

c) **No Impact**. The project site is located in an urban area and is currently operated as a stormwater spreading ground surrounded by residential and commercial uses. No habitat conservation plans or natural community conservation plans have been implemented or are planned for the project area. Therefore, no impacts will occur.

2.3.11 Mineral Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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) **No Impact.** The project involves enhancements to existing developed spreading grounds that are currently being used for infiltration of stormwater. A review of USGS mineral data for the Van Nuys Quadrangle (USGS, 2010) revealed no known mineral resources on the project site. Because the project results in a continuation of existing operations and because there are no resources present, the project will not result in the loss of any mineral resources of local or regional importance. Therefore, the project will have no impact.

2.3.12 Noise

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
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), c), d) **Potentially Significant Impact**. Construction of the project would result in noise generated by equipment and by vehicles entering and leaving the project site to carry off excess soil and for on-site earthwork. Due to the nature of the project, the deepening and enhancement of the existing spreading grounds, a significant volume of excess material may be generated. This excess material will be moved off-site by truck for disposal. Due to the large volume of material to be moved (approximately 1.3 million cubic yards), the limited capacity of each truck and the limited ability of trucks to enter and exit the site, it is estimated that transport of this material could take more than 1 year. Once complete, the project will have no effect on existing noise levels in the project vicinity. Because the noise generated by excavation and construction activities could continue for more than a year, the impacts could be potentially significant. Therefore, noise effects will be evaluated in the EIR.

b) **Less than Significant Impact.** Groundborne vibration and noise would be created during project construction by on-site earthwork and by the movement of soil hauling trucks. Since the project site is operated for groundwater recharge, on-site earthwork would not create excessive vibration experienced by a substantial number of people. Similarly, the soil hauling trucks would not create groundborne vibration greater than that created by existing equipment and vehicles on project area streets. Therefore, the impact will be less than significant.

e) and f) **No Impact.** The proposed project is not located within an airport land use plan or within 2 miles of a public airport or private airstrip. In addition, the project does not include new habitable structures and would involve no change in land use. Therefore, there will be no impact.

2.3.13 Population and Housing

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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) **No Impac**t. 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. While the project will capture stormwater for the purpose of supplementing groundwater supplies, there will be no additional potable water distribution systems built as part of or as a result of this project. Therefore, the project will not, either directly or indirectly, induce substantial population growth in the area. Therefore, no impacts will occur.

b) **No Impac**t. No housing would be displaced by the proposed project. Therefore, no impacts will occur.

c) **No Impac**t. No individuals would be displaced by the proposed project. Therefore, no impacts will occur.

2.3.14 Public Services

	Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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) **No Impact.** 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) 81 (14355 Arminty Street, Panorama City). 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. The project will 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. Therefore, no impacts will occur.

a)-ii) **Less Than Significant Impact**. Police protection for the project area is provided by the Los Angeles Police Department (LAPD) Foothill Community Police Station (12760 Osborne Street, Pacoima). The project would not result in an increase in residential, commercial, or industrial area but may include the addition of recreational features. Additional recreation at the project site would increase the use of the site by the public but is not expected to result in a significant increase in demand for security or calls for police services. Current and future site security measures include gated and controlled access as well as periodic patrols by LADWP security personnel. 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. Therefore, project-related impacts on police services will be less than significant.

a)-iii) **No Impact**. The project area is located in District B of the Los Angeles Unified School District (LAUSD). The project would not result in an increase in residential area, and will not result in an increased demand on existing schools or require new or physically altered facilities for the school system. Therefore, no impacts will occur.

a)-iv) **No Impact**. The project may include construction of new recreational facilities such as trails. No existing parks would be affected and no parks would face an increase in use during construction or operation of the project. Therefore, no impacts will occur.

a)-v) **No Impact**. 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 would be affected by the construction or operation of the project. Therefore, no impacts will occur.

2.3.15 Recreation

	Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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) **No Impact**. The project may include construction of new recreational facilities such as trails. However, the project does not include, nor would it induce, housing development. Therefore no existing parks would be affected and no parks would face an increase in use during construction or operation of the project. Therefore, no impacts will occur.

b) **Less Than Significant Impact**. The project may include construction of new recreational facilities. The facilities to be constructed would likely include walking trails and associated amenities such as benches and signage. The trails would be located on previously disturbed areas of the project site, or areas included as part of the proposed enhancements. Because the proposed construction of these new facilities will be integrated with the construction of the overall project, impacts will be less than significant.

2.3.16 Transportation and Traffic

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.	☒	☐	☐	☐
b) Conflict with an applicable congestion management program, including but not limited to, level of service standards and travel demand measures, or other standards 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)?	☒	☐	☐	☐
e) Result in inadequate emergency access?	☒	☐	☐	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

Discussion:

a) and b) **Potentially Significant Impact**. 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 features. In addition, increases in traffic would occur from construction vehicles needed for the removal of excess soil. 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 an exceedance of the level of service standard (LOS E) established by the Los Angeles County Metropolitan Transportation Authority (MTA) Congestion Management Program (Congestion Management Program for Los Angeles County, 2004). This impact may be potentially significant. The EIR will include a detailed evaluation of project-related impacts on traffic.

c) **No Impact**. There are two public airports located in the vicinity of the project area. The Bob Hope Airport is located approximately 2.5 miles southeast of the project area. The

Whiteman Airpark is located northwest of the project area and is approximately 2 miles north of the project site. The project does not involve structures of significant height that would result in a change in air traffic location. The project would not result in any increase in air traffic levels. Therefore, no impacts will occur.

d) **Potentially Significant Impact**. The project would not result in any permanent change to the design, location, or sizes of existing roadways; however, during construction of the project, lane or road closures may be necessary for the transport of equipment and soil in and out of the project site. These impacts could continue for more than 1 year. 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. This impact may be potentially significant for increase in traffic hazards. The EIR will include a detailed evaluation of project-related impacts on traffic.

e) **Potentially Significant Impact**. During construction of the project, lane or road closures may be necessary for the transport of equipment and soil in and out of the project site. These impacts could continue for more than 1 year. This impact may be potentially significant. The EIR will include a detailed evaluation of project-related impacts on emergency access.

f) **No Impact**. 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 public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Therefore, no impacts will occur.

2.3.17 Utilities and Service Systems

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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) **No Impact**. Stormwater runoff collected as part of the project would be infiltrated into the ground for groundwater recharge. Therefore, the project would not require any new connections to the existing sewer system and would have no impact on existing wastewater treatment systems. Therefore, no impacts will occur.

b) **No Impact**. No new water or wastewater facilities are required for the project. Therefore, there will be no impact.

c) **Potentially Significant Impact**. The project involves enhancement of an existing stormwater drainage facility. Construction of the facility may result in significant environmental impacts that will be analyzed in the EIR.

d) **No Impact**. LADWP is the water service provider for the project area. The project includes collection of stormwater for groundwater recharge. The project would not require any new connections to the existing potable water system. Therefore, no new or expanded water supply sources or entitlements would be required. Therefore, no impacts will occur.

e) **No Impact**. Stormwater runoff collected for the project would be infiltrated into the ground for groundwater recharge. 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. Therefore, no impacts will occur.

f) **Less Than Significant Impact**. 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 and trash removed periodically from the stormwater basins and the trash rack during maintenance.

The nearest active landfill to the project area is the Sunshine Canyon Landfill, located at 14747 San Fernando Road in Sylmar and owned by Browning-Ferris Industries (BFI) of California. Sunshine Canyon Landfill is permitted to accept up to 12,100 tons per day, Monday through Saturday (Solid Waste Facilities Permit, 2008). 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.

While the project is expected to generate a large amount of soil, that material will be re-used off-site. Based on the limited volume of non-soil solid waste generated by the project, it is expected that solid waste disposal could be accommodated by Sunshine Canyon Landfill or other landfills in the area. Therefore, project-related impacts related to landfill capacity will be less than significant.

g) **No Impact**. The California Integrated Waste Management Board (CIWMB) is responsible for managing California's solid waste stream. The City of Los Angeles is the Solid Waste Local Enforcement Agency (LEA) and 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). Therefore, no impacts will occur.

2.3.18 Mandatory Findings of Significance

	Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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) **Less Than Significant Impact with Mitigation Incorporated**. The proposed project site is 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. Based on survey of the project site, sensitive wildlife species are not known or anticipated at the site and significant impacts to wildlife species are not anticipated. Focused plant surveys failed to detect the presence of any special status plant species. Since the project will not impact wildlife or plant species of concern, impacts on biological resources will be less than significant.

Construction of the proposed project will involve up to an additional 18 feet of excavation to deepen basins and increase percolation. Therefore, there is some potential for project construction to impact archaeological resources, paleontological resources, and/or human remains if any exist in previously unimpacted deposits below the existing basins, although a records search conducted did not reveal any known resources in the project area.

Since there is the possibility of disturbing resources in previously unimpacted deposits, construction personnel will receive cultural resources training from a qualified archaeologist to recognize signs of potential archaeological and paleontological resources. Any resources encountered during excavation will be treated appropriately under the guidance of a qualified archaeologist/paleontologist; therefore, there will be a less than significant impact with incorporation of mitigation measures CR-1 and CR-2.

b) **Potentially Significant Impact**. 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 EIR will include an analysis of the significance of these potential cumulative impacts. These impacts may be potentially significant.

c) **Potentially Significant Impact**. 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. These impacts may be potentially significant. The EIR will include an analysis of the significance of these impacts and will also include a discussion of climate change relative to the proposed project.

Section 3
References and Report Preparation

3.1 REFERENCES

Blain, Mark, Manager, Biological Resources, BonTerra Consulting. Personal communication with Janet Fahey, MWH, January 28, 2010.

Browning-Ferris Industries, Sunshine Canyon Landfill. March 1, 2011. Available: http://www.sunshinecanyonlandfill.com/index.htm.

Browning-Ferris Industries, Sunshine Canyon Landfill, Solid Waste Facility Permit. July 7, 2008. Available: http://www.sunshinecanyonlandfill.com/home/safety_joint.html.

California Department of Conservation. 2009. State of California Seismic Hazard Zones, Burbank Quadrangles. Available: http://gmw.consrv.ca.gov/shmp/.

California Department of Fish and Game. 2009. California Natural Diversity Database.

California Department of Transportation. 2009. California Scenic Highway Mapping System. Available: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm.

California Geological Survey. 2003. GIS Files of Official Alquist-Priolo Earthquake Fault Zones, Southern Region. Available: http://www.conservation.ca.gov/cgs/rghm/ap/official_release/Pages/index.aspx

California Native Plant Society (CNPS). 2008. Electronic Inventory of Rare and Endangered Vascular Plants of California. Records of Occurrence for Van Nuys, San Fernando, Sunland, and Burbank, California, U.S. Geological Survey (USGS) 7.5-minute quadrangle maps. Sacramento, CA: Available: http://www.cnps.org/inventory.

California Regional Water Quality Control Board, Los Angeles Region. 1994 (and later amendments). Water Quality Control Plan: Los Angeles Region.

City Data. 2009a. Bob Hope Airport: Wildlife Incidents - Airplane Bird Strikes Available: http://www.city-data.com/wildlife/Bob-Hope-Airport-Burbank-California.html.

City Data. 2009b. Whiteman Airport: Wildlife Incidents - Airplane Bird Strikes Available: http://www.city-data.com/airports/Whiteman-Airport-Los-Angeles-California.html.

Environmental Data Resources, Inc. (EDR). 2002. EDR Area Study Report: Study Area, Sun Valley Watershed, Los Angeles, CA 91340. October 03, 2002.

Environmental Data Resources, Inc. (EDR). 2009. EDR Radius Map with GeoCheck for the Tujunga Spreading Grounds Enhancement Project, Inquiry Number: 2408884.2s, January 27, 2009.

Environmental Protection Agency (EPA). 2008. San Fernando Valley (area 1 North Hollywood And Burbank) Site Overview Available: http://yosemite.epa.gov /r9/sfund/r9sfdocw.nsf/ ce6c60ee7382a473882571af007af70d/a7dbbd3edaaf5cd788257007005e945f!OpenDocument. San Fernando Valley (Area 3 Verdugo) Site Overview Available: http://yosemite.epa.gov /r9/sfund/r9sfdocw.nsf/webdisplay/oid-7ff8a82b0ffeb4418825660b007ee677?OpenDocument.

FEMA. September 26, 2008 Flood Insurance Rate Map (FIRM) #06037C1310F.

GeoSyntec Consultants. 2009. Recharge Pilot Test Tujunga Spreading Grounds. Prepared for the City of Los Angeles.

Los Angeles, City of, Environmental Affairs Department. 2002. City of Los Angeles Environmental Affairs Department Local Enforcement Agency. Available: http://www.environmentla.org/.

-----. 1996. Conservation Element of the Los Angeles City General Plan. Available: http://cityplanning.lacity.org/cwd/gnlpln/consvelt.pdf.

-----. 1996. Safety Element of the Los Angeles City General Plan. Available: http://cityplanning.lacity.org/cwd/gnlpln/saftyelt.pdf.

-----. 1999a. Sunland-Tujunga-Lake View Terrace-Shadow Hills-East La Tuna Canyon New Community Plan. Available: http://sites.google.com/site/sunlandncp/.

-----. 1999b. Noise Element of the Los Angeles City General Plan City Plan. Available: http://cityplanning.lacity.org/cwd/gnlpln/noiseElt.pdf.

Los Angeles, City of, Department of Water and Power. 2008. Internal Communication dated December 30, 2008 from Thomas Erb, Director of Water Resources, Department of Water and Power, City of Los Angeles to Michael Young, Department of City Planning, City of Los Angeles.

Los Angeles, City of. 2006. Native Tree Protection Ordinance. Los Angeles Municipal Code (Section 1. Subdivision 12 of Subsection A of Section 12.21; Ordinance 177404).

Los Angeles, County of. 2004. Congestion Management Program.

Los Angeles Daily News. 2010. Government says bird-plan collisions may surpass 10,000. Available: http://www.dailynews.com/news/ci_14175560. January 12, 2010.

Rong, Yue, Environmental Program Manager, Underground Storage Tank Program, State Water Quality Control Board – Los Angeles Region. 2009. Personal communication with Lauren Siniawer, MWH, December 17, 2009.

South Coast Air Quality Management District (SCAQMD). 1993. CEQA Air Quality Handbook.

Thomas Guide. 2010. Map for Los Angeles County. Published by Rand McNally.

3.2 PREPARERS OF THE INITIAL STUDY

PREPARED BY

Los Angeles Department of Water & Power
Environmental Services
111 North Hope Street, Room 1044
Los Angeles, CA 90012

Charles C. Holloway, Manager of Environmental Planning and Assessment
Hal Messinger, Environmental Project Manager
Art Castro, Project Engineer

TECHNICAL ASSISTANCE PROVIDED BY

MWH Americas, Inc.
Sarah Garber, Project Manager
Juan Diaz-Carreras, AICP, Task Leader
Janet Fahey, D.Env., P.E., Technical Reviewer
Lauren Siniawer, Environmental Analysis

BonTerra Consulting
Patrick O. Maxon, RPA, Director, Cultural Resources
Mark T Blain, Manager, Biological Resources

3.3 ACRONYMS AND ABBREVIATIONS

AQMP	Air Quality Management Plan
ASTM	American Society for Testing and Materials
BASH	Bird Air Strike Hazard
BMPs	Best Management Practices
Cal/EPA	California Environmental Protection Agency
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CIWMB	California Integrated Waste Management Board
dBA	Decibel, A-weighted scale
EDR	Environmental Data Resources, Inc.
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
GHG	Greenhouse Gas
Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
FEMA	Federal Emergency Management Agency
FMMP	Farmland Mapping and Monitoring Program
Hwy	Highway
IS	Initial Study
IRWMP	(Greater Los Angeles) Integrated Regional Water Management Plan
LABOS	(City of) Los Angeles Bureau of Sanitation
LADWP	(City of) Los Angeles Department of Water and Power
LAFD	Los Angeles Fire Department
LAMC	Los Angeles Municipal Code
LAPD	Los Angeles Police Department
LEA	(Waste) Local Enforcement Agency
Leq	Equivalent noise level
MTA	(County of Los Angeles) Metropolitan Transportation Authority
NAHC	Native American Heritage Commission
NO_3	Nitrate
NPDES	National Pollutant Discharge Elimination System

NPL	National Priorities List
PCE	Tetrachloroethylene
PM10	particulate matter 10 microns or less in diameter
PM2.5	particulate matter 2.5 microns or less in diameter
RWQCB	Regional Water Quality Control Board
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coast Information Center
SFV	San Fernando Valley
SOx	sulfur oxides
SNA	Significant Natural Areas
SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
TAC	Toxic Air Contaminants
TCE	Trichloroethylene
TSG	Tujunga Spreading Grounds
UST	Underground Storage Tank
VOC	volatile organic compound

Appendix A

BonTerra
CONSULTING

MEMORANDUM

February 24, 2009

To: Ms. Sarah Garber
MWH Americas, Inc.
626 Wilshire Blvd, Ste 850
Los Angeles, CA 90017

From: Brian Daniels
Senior Biologist

Marc Blain
Biological Resources Manager

Subject: **Tujunga Spreading Grounds Enhancement Project Biological Constraints Analysis**

Introduction

This Memorandum describes the biological resources constraints analysis undertaken for the proposed Tujunga Spreading Grounds Enhancement Project, Los Angeles, California. When the Tujunga Spreading Grounds facility recharges large amounts of water, the nearby presence of the Sheldon-Arleta Landfill causes the migration of methane gas from the landfill to local residences. The proposed Tujunga Spreading Grounds project consists, in part, of an alteration to the current intake facility, creation of a low-flow treatment area, installation of two new intake facilities, and reactivation, deepening and/or combining of existing water basins to alleviate this problem.

Methods

BonTerra Consulting Senior Biologist Brian Daniels conducted a general biological survey on February 11, 2009 in order to evaluate potential biological constraints to proposed activities at the Tujunga Spreading Grounds (hereafter referred to as the site). Sources used to identify significant biological resources that may be present at the site included special status plant and wildlife species lists published by the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Game's (CDFG) California Natural Diversity Database (CDFG 2009), and the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS 2009). In addition, other biological studies conducted in the vicinity of the site were reviewed. All plant and wildlife species observed were recorded in field notes.

Site Description

The Los Angeles Department of Water and Power owns the approximately 160 acre site that is located in the City of Los Angeles (Exhibit 1). Operation and maintenance of the site is provided by the Los Angeles County Department of Public Works Flood Maintenance Division. The site consists of 17 shallow basins of varying sizes and configurations along with associated facilities such as a pump station and rubber dam located on the Tujunga Wash Channel.

The site is on level ground located at the east end of the San Fernando Valley. It is situated at the intersection of Interstate-5 (Golden State Freeway) and State Route-170 (Hollywood Freeway) and surrounded by urban areas. The Tujunga Wash Channel forms the northern boundary of the site but otherwise it is isolated from natural open space areas (Exhibit 2). Tujunga Wash flows southward into the Los Angeles River. Just east of the site is the west end of the Verdugo Mountains. The site is located within the Van Nuys U.S. Geological Survey (USGS) 7.5-minute quadrangle map.

Survey Results

Vegetation

The site supports minimal vegetation, as the basins and surrounding dikes are generally maintained on a regular basis. On-site vegetation consists primarily of non-native weedy (ruderal) vegetation. Areas that are dominated by ruderal vegetation would be mapped as "disturbed" areas unless water was present, in which case they would be mapped as "open water". A few of the basins contained water during the survey. Native vegetation is scarce in the disturbed areas and is found as either isolated individuals or in small patches, and is generally limited to the basin banks. This native vegetation includes riparian species such as black willow (*Salix gooddingii*), narrow-leaved willow (*Salix exigua*), and mule fat (*Baccharis pilularis*). Other native species present included California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), deerweed (*Lotus scoparius*), California croton (*Croton californicus*), laurel sumac (*Malosma laurina*), scale-broom (*Lepidospartum squamatum*), and coastal prickly pear (*Opuntia littoralis*). Only in Basins 6 and 8, where active maintenance activities do not occur or have not occurred for at least a few years, was native vegetation present in quantities sufficient to be mapped separately from the disturbed areas. Scale-broom was the dominate species in Basin 6 and this was mapped as "alluvial sage scrub" vegetation type. Basin 8 supported a mix of sage scrub species dominated by California buckwheat and non-native annual grasses. In addition to the above vegetation types, ornamental vegetation is present on the site around the buildings and as isolated individuals elsewhere.

Wildlife

The disturbed nature of the site and its isolation from natural open space areas limits the number and variety of wildlife species expected to occur. Apart from birds and other highly mobile species, only those species that have adapted to urban habitats are expected to occur. Other than the non-native western mosquito fish (*Gambusia affinis*), released in urban areas to control mosquitoes, no fish species are expected to occur at the site. Native amphibian species that may occur include the Pacific treefrog (*Pseudacris regilla*) and western toad (*Bufo boreas*). However, the non-native bullfrog (*Rana catesbeiana*) and African clawed frog (*Xenopus laevis*) are expected to occur. These two non-native amphibian species are detrimental to native wildlife species.

Reptile species expected to occur on the site include the western fence lizard (*Sceloporus occidentalis*), southern alligator lizard (*Elgaria multicarinata*) and the gopher snake (*Pituophis catenifer*). The open water habitats on the site are expected to attract a relatively large number and diversity of water birds, especially during migration and the winter season. Observed during the survey were Canada goose (*Branta Canadensis*), gadwall (*Anas strepara*), American wigeon (*Anas Americana*), mallard (*Anas platyrhynchos*), northern shoveler (*Anas clypeata*), and ring-necked duck (*Aythya collaris*). Sandpipers are expected to be common at the site, especially during migration and when the ponds are shallow enough to expose mud habitats for foraging. The least sandpiper (*Calidris minutilla*) was observed at the site during the survey. Gulls are expected to be occasionally numerous at the site during the winter season, but only a few ring-billed gulls (*Larus delawarensis*) was observed during the survey. Raptors are also expected to be relatively common at the site during the winter season and turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*) were observed during the survey. No mammal species were observed during the survey but the Virginia opossum (*Didelphis virginiana*), California ground squirrel (*Spermophilus beecheyi*), black rat (*Rattus rattus),* coyote (*Canis latrans*), and raccoon (*Procyon lotor*) are expected to occur at the site. Other mammal species that are expected to occur on the project site include several bat species, but these will mainly occur during migration and only for foraging activities as roosting habitat is limited to the few man-made structures on the site.

Conclusions

Special Status Plant and Wildlife Species

The search for occurrences of special status species in the vicinity of the site produced a total of 17 special status plant species and 26 special status wildlife species. Each of these 43 species was evaluated for their potential to occur on the site. The construction and maintenance of the site has resulted in a level of disturbance that precludes the presence of most, if not all of these species. Even if some do occur, they are not expected to occur in substantial enough numbers or to use the site for important ecological reasons (i.e., nesting) that would warrant a finding of significance under CEQA if impacted by the project. However, the presence of any State- or federally-listed Threatened and/or Endangered species would present a constraint to any proposed activities on the project site.

Five of these 17 special status plant species are State- or federally-listed as Endangered: Braunton's milk-vetch (*Astragalus brauntonii*), Nevin's barberry (*Berberis nevinii*), San Fernando Valley spineflower (*Dodecahema parryi* var. *fernandina*), slender-horned spineflower (*Dodecahema leptoceras*), and California Orcutt grass (*Orcuttia californica*). The site does not provide suitable habitat for the California Orcutt grass as it is found in vernal pools and it is not expected to occur. However, the other four species may occur in coastal sage scrub/grassland and alluvial sage scrub vegetation types, similar to the habitats present in Basins 6 and 8. Since these two basins have not been maintained for at least a few years, as evidenced by the maturity of existing vegetation, and the relative lack of disturbance, there is potential for these four plant species to occur in Basins 6 and 8 on the site.

Six of the 26 wildlife species are State- or federally-listed as Threatened and/or Endangered: Santa Ana sucker (*Catostomus santaanae*), Sierra Madre yellow-legged frog (*Rana muscosa*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), southwestern willow flycatcher (*Empidonax traillii extimus*), least Bell's vireo (*Vireo bellii pusillus*), and coastal California gnatcatcher (*Polioptila californica californica*). The site does not provide suitable habitat for the Santa Ana sucker and Sierra Madre yellow-legged frog as they are found in stream systems with natural habitats and they are not expected to occur. The western yellow-billed cuckoo, southwestern willow flycatcher, and least Bell's vireo nest in riparian habitats, which are lacking on the site; therefore, the project site does not provide suitable habitat for these three bird species and they are not expected to occur. The site does provide potentially suitable habitat for the coastal California gnatcatcher as it occupies alluvial sage scrub and coastal sage scrub habitats; however, the amount of potentially suitable habitat on the site is not considered substantial enough to support this species. Since there are no open space areas in the immediate vicinity of the site that could provide potentially suitable habitat, the limited amount of alluvial sage scrub and coastal sage scrub habitats on the site are not sufficient to support the coastal California gnatcatcher and it is not expected to occur.

Special Status Habitats

Special status habitats are typically protected by ordinance, code, or regulation under which conformance typically requires a permit or other discretionary action prior to impacting the habitat. Coastal sage scrub occurs throughout the undeveloped foothills of southern California; it has high potential to support special status plant and wildlife species in natural areas and impacts to it typically require mitigation in Los Angeles County. Alluvial sage scrub is more restricted in range than coastal sage scrub and is typically associated with rivers, creeks, and washes. As with coastal sage scrub habitat, alluvial sage scrub has a high potential to support special status plant and wildlife species. In addition, the basins and channels on the sites may be considered jurisdictional by the U.S. Army Corps of Engineers (USACE), CDFG and/or Regional Water Quality Control Board (CDFG).

Significant Ecological Areas (SEAs) were established in 1976 by Los Angeles County to designate areas with sensitive environmental conditions and/or resources in order to preserve biological diversity. SEA boundaries are general in nature, and broadly outline the biological resources of concern. Although the site was initially considered as SEA # 46 for Los Angeles County (England & Nelson 1976), it was determined through further analysis that the existing biological resources were not significant enough for inclusion as an SEA (PCR Services Corporation 2000).

Recommendations

In order to ensure that project implementation would not result in significant impacts on special status plant species or jurisdictional waters, the following mitigation measures are recommended.

(1) Prior to commencement of construction activities, focused botanical surveys shall be conducted in Basins 6 and 8 to determine the presence or absence of Braunton's milk-vetch (*Astragalus brauntonii*), Nevin's barberry (*Berberis nevinii*), San Fernando Valley spineflower (*Dodecahema parryi* var. *fernandina*), and slender-horned spineflower (*Dodecahema leptoceras*). For special status plants impacted by project implementation, mitigation will include transplantation and/or seed collection and revegetation into a suitable mitigation site in the undeveloped portion of the project site or the adjacent undeveloped acreage. The City will select a qualified Biologist to prepare and implement a Mitigation Plan, which shall include performance measures for plant survival, to the satisfaction of the City of Los Angeles. The mitigation area shall be preserved as open space in perpetuity.

(2) Prior to the initiation of project activities, USACE, CDFG, and RWQCB permit authorizations shall be obtained if named agencies claim jurisdiction over jurisdictional waters and/or associated riparian habitat that may be impacted. All provisions or conditions of the permits shall be complied with. Impacted jurisdictional resources will be replaced as stipulated by permit conditions but will be at a minimum 1:1 ratio.

References

California Department of Fish and Game (CDFG). 2009. California Natural Diversity Database. Records of Occurrence for Van Nuys, San Fernando, Sunland, and Burbank, California, U.S. Geological Survey (USGS) 7.5-minute quadrangle maps. Sacramento, CA: CDFG, Natural Heritage Division.

Regional Location

Exhibit 1

Tujunga Spreading Grounds

N
W E
S

10 5 0 10
Miles

BonTerra CONSULTING

R:\Projects\MWATSON\J009\Graphics\Ex1_RL_022309.pdf

D:\Projects\MWATSON\J009\Ex_RL_022309.mxd

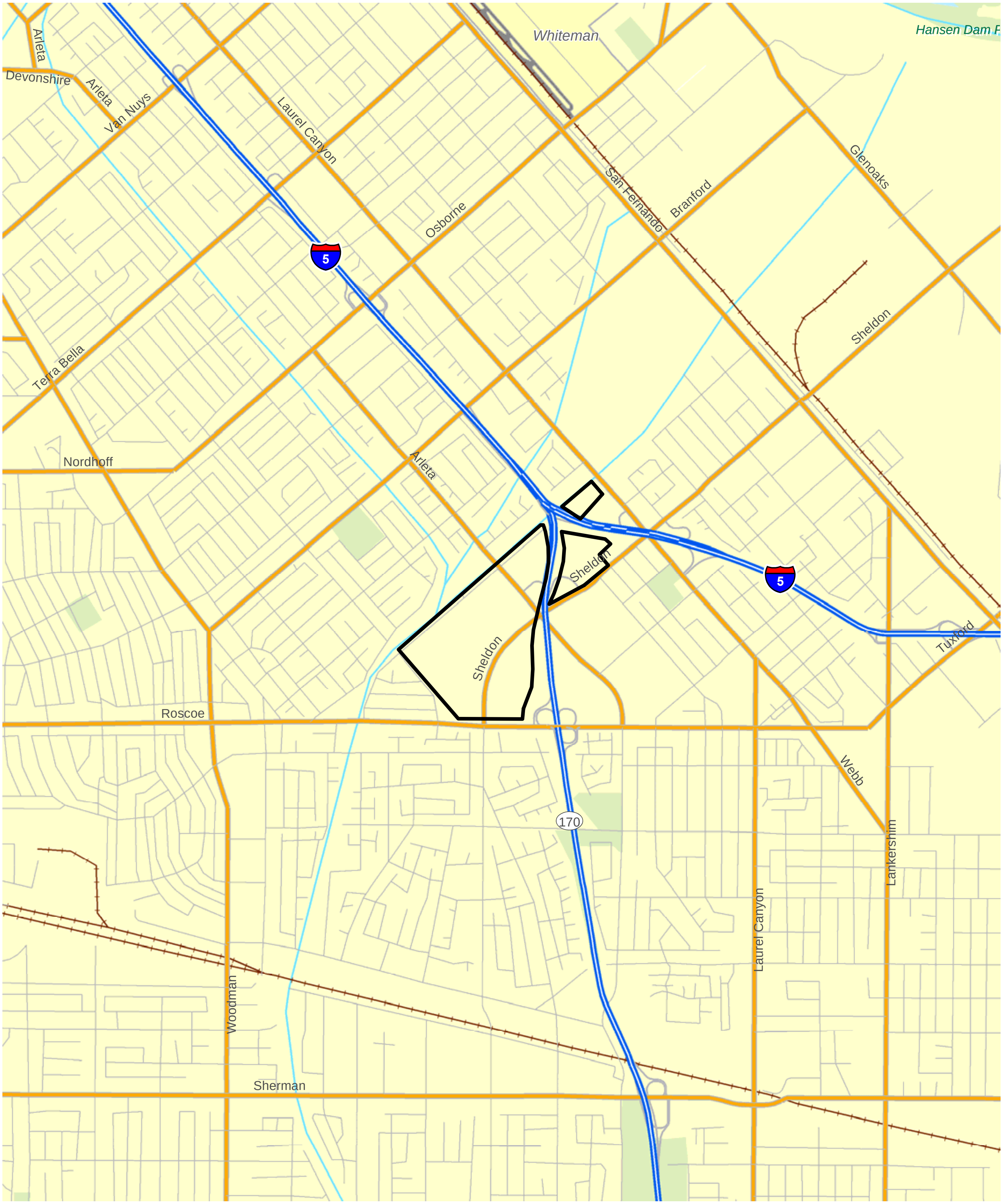
California Native Plant Society (CNPS). 2008. Electronic Inventory of Rare and Endangered Vascular Plants of California. Records of Occurrence for Van Nuys, San Fernando, Sunland, and Burbank, California, U.S. Geological Survey (USGS) 7.5-minute quadrangle maps. Sacramento, CA: CNPS. http://www.cnps.org/inventory.

England & Nelson Environmental Consultants. 1976. *Land Capability/Suitability Study, Los Angeles County General Plan Revision Program, Significant Ecological Areas Report.* Riverside, California.

PCR Services Corporation, 2000. *Los Angeles County Significant Ecological Area Update Study*, *Background Report*. Prepared for Los Angeles County Department of Regional Planning.

Attachments:
Exhibit 1 – Regional Location
Exhibit 2 – Local Vicinity

R:\PAS\Projects\MWatson\J009\Tujunga\Tujunga Bio Memo-022409.doc



D:\Projects\MWATSON\J009\Ex_LV_022309.mxd

Local Vicinity

Exhibit 2

Tujunga Spreading Grounds

N
W E
S

0.5 0.25 0 0.5
Miles

BonTerra
CONSULTING

R:\Projects\MWATSON\J009\Graphics\Ex2_LV_022309.pdf

BonTerra
CONSULTING

COSTA MESA PASADENA

T: (626) 351-2000 F: (626) 351-2030
www.BonTerraConsulting.com

3452 E. Foothill Blvd., Suite 420
Pasadena, CA 91107

July 13, 2010

Mr. Juan H. Diaz-Carreras
Lead Supervising Environmental Scientist
MWH Americas, Inc.
626 Wilshire Boulevard, Suite 850
Los Angeles, California 90017

VIA EMAIL AND U.S. MAIL
Juan.H.Diaz-Carreras@us.mwhglobal.com

Subject: Results of Focused Plant Surveys for Basins 6 and 8 of the Tujunga Spreading Grounds Enhancement Project, Los Angeles County, California

Dear Mr. Diaz-Carreras:

This Letter Report presents the findings of focused plant surveys conducted for Basins 6 and 8 of the Tujunga Spreading Grounds Enhancement Project in Los Angeles County, California. Surveys were conducted for federally listed Endangered Braunton's milk-vetch (*Astragalus brauntonii*), federally and State-listed Endangered Nevin's barberry (*Berberis nevinii*), federally listed Candidate and State-listed Endangered San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*), and federally and State-listed Endangered slender-horned spineflower (*Dodecahema leptoceras*). Presence/absence surveys were recommended for these species in Basins 6 and 8 based on the results of a biological constraints analysis (BonTerra Consulting 2009).

PROJECT LOCATION AND BACKGROUND

The project site is located in the City of Los Angeles in the San Fernando Valley. It is situated at the intersection of Interstate 5 (Golden State Freeway) and State Route 170 (Hollywood Freeway) and surrounded by urban areas (Exhibits 1 and 2). The site is located within the U.S. Geological Survey (USGS) Van Nuys 7.5-minute quadrangle map, with an elevation of approximately 840 feet above mean sea level (msl). The survey area for Basin 6 is approximately 2.7 acres, and for Basin 8 is approximately 13.1 acres.

Land use history for the project site consists primarily of flood maintenance, as these 2 basins are part of 17 basins located in the Tujunga Wash Channel, which flows south into the Los Angeles River. The Los Angeles Department of Water and Power owns the site; operation and maintenance is provided by the Los Angeles County Department of Public Works, Flood Maintenance Division. When the Tujunga Spreading Grounds facility recharges large amounts of water, the nearby presence of the Sheldon-Arleta Landfill causes the migration of methane gas from the landfill to local residences. The proposed Tujunga Spreading Grounds project consists, in part, of an alteration to the current intake facility; creation of a low-flow treatment area; installation of two new intake facilities; and reactivation, deepening, and/or combining of existing water basins to alleviate this problem.

METHODS

Botanical surveys were floristic in nature and consistent with the current protocols created by the California Department of Fish and Game (CDFG 2009). Prior to the field survey, a literature review was conducted to identify special status plants known from the general vicinity. This included a review of the USGS Van Nuys, San Fernando, Sunland, and Burbank 7.5-minute quadrangles in the CDFG's California Natural Diversity Database (CDFG 2010) and the California Native Plant Society's (CNPS') Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2010).

Reference populations were monitored for annual and difficult-to-detect target species to ensure that the scheduled surveys were comprehensive. Braunton's milk-vetch was flowering in the Monrovia area on April 28, 2010. San Fernando Valley spineflower was flowering west of the San Fernando Valley on April 22, 2010. Slender-horned spineflower was flowering in the Soledad Canyon area on April 22, 2010. Reference populations were not monitored for Nevin's barberry because it is a large perennial species that would be visible during the time of the surveys.

According to the National Weather Service, downtown Los Angeles (located about 17 miles from the survey areas) has received 16.3 inches of precipitation for Water Year 2010 (October 1, 2009 through Spring 2010), which is about 114 percent of the normal average (National Weather Service 2010).

BonTerra Consulting Botanist Andrea Edwards and Ecologist David Hughes conducted special status plant surveys on April 29, 2010, which were comprised of five total person-hours. The survey areas were systematically surveyed during the site visit. All plant species observed were recorded in field notes. Plant species were identified in the field or collected for subsequent identification using keys in Hickman (1993) and Munz (1974). Taxonomy follows Hickman (1993) and current scientific data (e.g., scientific journals) for scientific and common names.

SITE DESCRIPTION

Basin 6 contains high quality alluvial sage scrub vegetation and is surrounded by a developed area consisting of a paved road. Basin 8 contains California buckwheat scrub and non-native grassland vegetation, which are co-dominant across much of the site. Non-native grassland is also present along the northern and eastern edges of the basin. The central portion of the basin consists of recently disturbed areas generally devoid of vegetation, and a disturbed area consisting of a dirt road which surrounds the basin. Developed areas are present, including a concrete-lined channel and small concrete check dam. Soil types generally consist of the Tujunga Soboba association, which is composed of sand, loamy sand, and sandy loam layers (USDA 1969). Exhibit 3 includes a map of vegetation types and Exhibit 4 contains site photographs.

RESULTS

No special status plant species were observed during the surveys. A list of all plants observed within each survey area during focused surveys can be found in Attachment A. Although reference populations and regional rainfall amounts were monitored to ensure the scientific adequacy of these focused surveys, there is always a minimal potential for false negative survey results as species could possibly be present on a site but may not be detectable at the time of survey. Based on the negative survey findings, no potential threats or impacts to any federally or State-listed special status plant species are expected, and no avoidance or mitigation measures are recommended.

If you have any comments or questions, please call Andrea Edwards at (626) 351-2000.

Sincerely,

BONTERRA CONSULTING

Marc Blain

Marc T. Blain
Associate, Biological Resources Manager

Andrea D. Edwards

Andrea D. Edwards
Biologist

Enclosures:
- Exhibit 1 – Regional Location
- Exhibit 2 – Local Vicinity
- Exhibit 3 – Vegetation Types
- Exhibit 4 – Site Photographs
- Attachment A – Plant Compendia

R:\PAS\Projects\MWatson\J019\SS Plant Report 071310.doc

REFERENCES

BonTerra Consulting. 2009 (February 24). *Tujunga Spreading Grounds Enhancement Project Biological Constraints Analysis*. Pasadena, CA: BonTerra Consulting.

California Department of Fish and Game (CDFG). 2010. California Natural Diversity Database. Records of Occurrence for Van Nuys, San Fernando, Sunland, and Burbank quadrangle maps. Sacramento, CA: CDFG, Natural Heritage Division.

———. 2009 (November 24). *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities*. Sacramento, CA: CDFG.

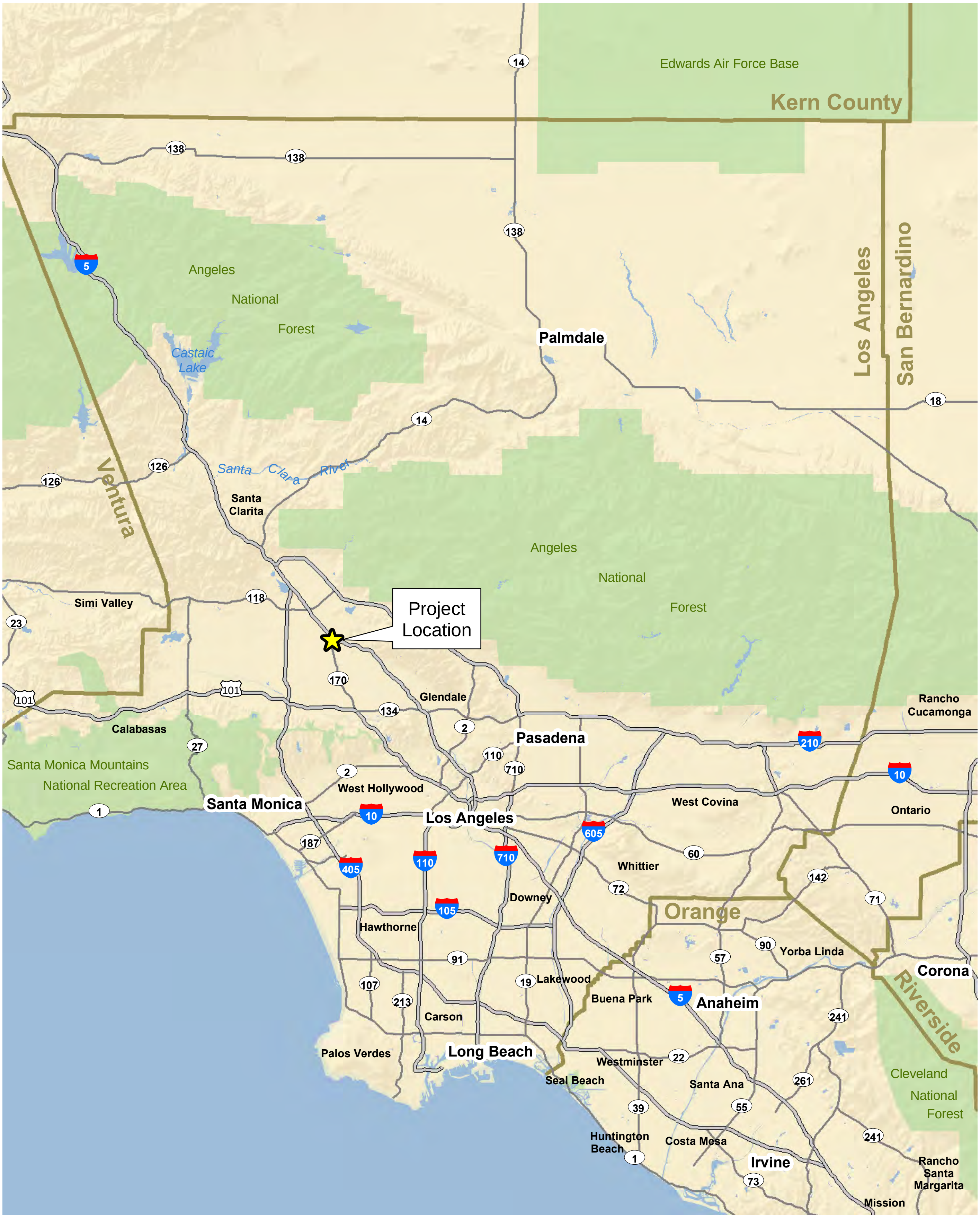
California Native Plant Society (CNPS). 2010. Electronic Inventory of Rare and Endangered Vascular Plants of California. Records of Occurrence for Van Nuys, San Fernando, Sunland, and Burbank quadrangle maps. Sacramento, CA: CNPS. http://www.cnps.org/inventory.

Hickman, J.C., Ed. 1993. *The Jepson Manual of Higher Plants of California*. Berkeley, CA: University of California Press.

Munz, P.A. 1974. *A Flora of Southern California*. Berkeley, CA: University of California Press.

National Weather Service. 2010 (May 18). Monthly Precipitation Summary Water Year 2010. Sacramento, CA: National Weather Service, California-Nevada River Forecast Center. http://www.cnrfc.noaa.gov/monthly_precip.php.

U.S. Department of Agriculture (USDA). 1969 (revised). Report and General Soil Map, Los Angeles County, California. Lancaster, CA: USDA, Natural Resources Conservation Service.



D:\Projects\MWatson\J019\MXD\Ex_RL.mxd

Regional Location

Exhibit 1

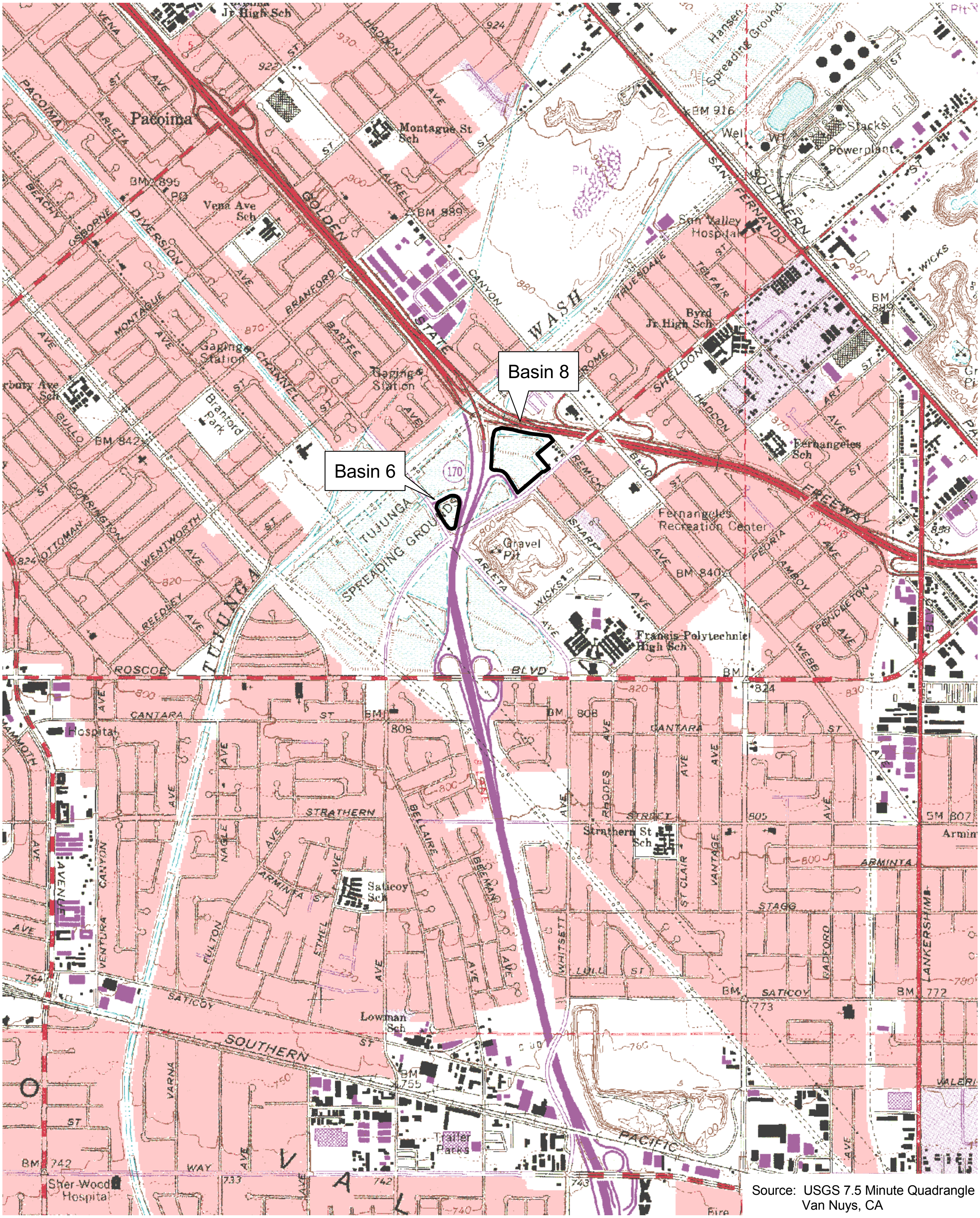
Tujunga Spreading Grounds Enhancement Project, Los Angeles County, California

N
W E
S

10 5 0 10
Miles

BonTerra CONSULTING

(Rev 06/24/10 CJS) Projects\MWatson\J019\Ex1_RL.pdf



Source: USGS 7.5 Minute Quadrangle
Van Nuys, CA

Local Vicinity

Exhibit 2

Tujunga Spreading Grounds Enhancement Project, Los Angeles County, California

2,000 1,000 0 2,000
Feet

(Rev 06/24/10 CJS) Projects\MWatson\J019\Graphics\Ex2_LV_quad.pdf

D:\Projects\MWatson\J019\MXD\Ex_LV_quad.mxd

Vegetation Types

Exhibit 3

Tujunga Spreading Grounds Enhancement Project, Los Angeles County, California

300 150 0 300 Feet

BonTerra CONSULTING

(Rev 07/09/10 CJS) Projects/MWatson/J019/Graphics/Ex3_veg.pdf

D:\Projects\MWatson\J019\MXD\Ex_veg.mxd

Basin 6

Basin 8

D:\Projects\MWatson\J019\Graphics\Ex_photosA.ai

Site Photographs

Exhibit 4

Tujunga Spreading Grounds Enhancement Project, Los Angeles County, California

BonTerra CONSULTING

(Rev 06/24/10 CJS) Projects\MWatson\J019\Graphics\Ex4_photosA.pdf

ATTACHMENT A

PLANT COMPENDIA
TUJUNGA SPREADING GROUNDS ENHANCEMENT PROJECT

July 13, 2010

BASIN 6 PLANT COMPENDIUM

FLOWERING PLANTS
CLASS DICOTYLEDONES (DICOTS)
ASTERACEAE (COMPOSITAE) - SUNFLOWER FAMILY
Achillea millefolium common yarrow
Ambrosia acanthicarpa annual bursage
*Cnicus benedictus** blessed thistle
Heterotheca sessiliflora ssp. *fastigiata* (?) fastigiate golden aster
*Hypochaeris glabra** smooth cat's ear
Lepidospartum squamatum scale-broom
*Senecio vulgaris** common groundsel
*Sonchus oleraceus** common sow-thistle
BRASSICACEAE (CRUCIFERAE) - MUSTARD FAMILY
*Hirschfeldia incana** shortpod mustard
CACTACEAE - CACTUS FAMILY
Opuntia sp. prickly pear
CHENOPODIACEAE - GOOSEFOOT FAMILY
*Chenopodium album** lamb's quarters
EUPHORBIACEAE - SPURGE FAMILY
Croton californicus California croton
FABACEAE (LEGUMINOSAE) - LEGUME FAMILY
Lotus scoparius deerweed / California broom
Lupinus sparsiflorus Coulter's lupine
GERANIACEAE - GERANIUM FAMILY
*Erodium botrys** long-beaked filaree
*Erodium cicutarium** red-stemmed filaree
ONAGRACEAE - EVENING PRIMROSE FAMILY
Camissonia californica mustard-like evening primrose

BASIN 6 PLANT COMPENDIUM (Continued)

FLOWERING PLANTS
POLEMONIACEAE - PHLOX FAMILY
Eriastrum densifolium ssp. *elongatum* (?) woolly-star
POLYGONACEAE - BUCKWHEAT FAMILY
Eriogonum fasciculatum var. *foliolosum* interior flat-topped buckwheat
SOLANACEAE - NIGHTSHADE FAMILY
Datura wrightii jimson weed
CLASS MONOCOTYLEDONES (MONOCOTS)
POACEAE [GRAMINEAE] - GRASS FAMILY
*Avena barbata** slender wild oat
*Avena fatua** wild oat
*Bromus diandrus** ripgut grass
Bromus madritensis ssp. *rubens** foxtail chess
*Schismus barbatus** Mediterranean schismus
** indicates non-native species*

BASIN 8 PLANT COMPENDIUM

FLOWERING PLANTS
CLASS DICOTYLEDONES (DICOTS)
ANACARDIACEAE - SUMAC FAMILY
Malosma laurina laurel sumac
*Schinus terebinthifolius** Brazilian pepper tree
ASTERACEAE (COMPOSITAE) - SUNFLOWER FAMILY
Ambrosia acanthicarpa annual bursage
Artemisia californica California sagebrush
Baccharis salicifolia mule fat
*Centaurea melitensis** tocalote
Conyza canadensis common horseweed
Filago californica fluffweed
Gnaphalium bicolor bicolored everlasting / Bioletti's cudweed
Gnaphalium canescens everlasting

BASIN 8 PLANT COMPENDIUM (Continued)

FLOWERING PLANTS
Helianthus gracilentus slender sunflower
Heterotheca grandiflora telegraph weed
Heterotheca sessiliflora ssp. *fastigiata* (?) fastigiate golden aster
*Hypochaeris glabra** smooth cat's ear
*Lactuca serriola** prickly lettuce
Lepidospartum squamatum scale-broom
Malacothrix saxatilis cliff malacothrix
*Senecio vulgaris** common groundsel
*Sonchus oleraceus** common sow-thistle
BRASSICACEAE (CRUCIFERAE) - MUSTARD FAMILY
*Hirschfeldia incana** shortpod mustard
CAPRIFOLIACEAE - HONEYSUCKLE FAMILY
Sambucus mexicana blue elderberry
CHENOPODIACEAE - GOOSEFOOT FAMILY
*Chenopodium album** lamb's quarters
*Salsola tragus** Russian thistle
CONVOLVULACEAE - MORNING-GLORY FAMILY
Calystegia macrostegia morning-glory
EUPHORBIACEAE - SPURGE FAMILY
Croton californicus California croton
*Ricinus communis** castor bean
FABACEAE (LEGUMINOSAE) - LEGUME FAMILY
Lotus purshianus Spanish clover
Lotus salsuginosus ssp. *salsuginosus* alkali lotus
Lotus scoparius deerweed / California broom
Lupinus bicolor miniature lupine
Lupinus sparsiflorus Coulter's lupine
Lupinus succulentus arroyo lupine
Lupinus truncatus truncate lupine / collar lupine

BASIN 8 PLANT COMPENDIUM (Continued)

FLOWERING PLANTS
*Medicago polymorpha** California burclover
*Melilotus indica** sourclover
*Trifolium hirtum** rose clover
GERANIACEAE - GERANIUM FAMILY
*Erodium botrys** long-beaked filaree
*Erodium cicutarium** red-stemmed filaree
MALVACEAE - MALLOW FAMILY
*Malva parviflora** cheeseweed
ONAGRACEAE - EVENING PRIMROSE FAMILY
Camissonia bistorta California sun cup
Camissonia californica mustard-like evening primrose
Camissonia intermedia intermediate primrose
POLEMONIACEAE - PHLOX FAMILY
Eriastrum densifolium ssp. *elongatum* (?) woolly-star
POLYGONACEAE - BUCKWHEAT FAMILY
Eriogonum fasciculatum var. *foliolosum* interior flat-topped buckwheat
SOLANACEAE - NIGHTSHADE FAMILY
Datura wrightii jimson weed
*Nicotiana glauca** tree tobacco
Solanum xanti chaparral nightshade
ULMACEAE - ELM FAMILY
*Ulmus parvifolia** Chinese elm
CLASS MONOCOTYLEDONES (MONOCOTS)
POACEAE [GRAMINEAE] - GRASS FAMILY
*Avena barbata** slender wild oat
*Avena fatua** wild oat
*Bromus diandrus** ripgut grass
Bromus madritensis ssp. *rubens** foxtail chess
*Cynodon dactylon** bermuda grass
*Hordeum murinum** foxtail barley

BASIN 8 PLANT COMPENDIUM (Continued)

FLOWERING PLANTS
*Schismus barbatus** Mediterranean schismus
*Vulpia myuros** foxtail fescue
** indicates non-native species*

Appendix B

BonTerra
CONSULTING

MEMORANDUM

March 19, 2009

To: Ms. Sarah Garber
MWH Americas, Inc.
626 Wilshire Blvd, Ste 850
Los Angeles CA 90017

From: Patrick Maxon, RPA
Director, Cultural Resources

Subject: **Tujunga Spreading Grounds Enhancement Project Cultural Constraints Assessment**

This Memorandum describes the cultural resources constraints assessment undertaken for the proposed Tujunga Spreading Grounds Enhancement Project, Los Angeles, California. When the Tujunga Spreading Grounds facility recharges large amounts of water, the nearby presence of the Sheldon-Arleta Landfill causes the migration of methane gas from the landfill to local residences. The proposed Tujunga Spreading Grounds project consists, in part, of an alteration to the current intake facility, creation of a low-flow treatment area, installation of two new intake facilities, and reactivation, deepening and/or combining of existing water basins.

The cultural resources study consisted of a records search undertaken at the South Central Coastal Information Center (SCCIC), California State University, Fullerton; initiation of Native American scoping by consultation with the Native American Heritage Commission (NAHC); a paleontological records search at the Los Angeles County Museum (LACM); and this assessment of the project's potential to adversely impact cultural resources, with recommendations for mitigating any adverse impacts to a less than significant level.

Location

The 160-acre Tujunga Spreading Grounds project area is located at the juncture of Interstate 5 and the Hollywood (170) Freeway, in the City of Los Angeles. Roscoe Boulevard forms the southern boundary of the property. The project location is located within the USGS 7.5 Minute Quadrangle Van Nuys, CA; Township 2 North; Range 15 West.

Cultural Resources Records Search

An archaeological/historic records search conducted by BonTerra Consulting archaeologist Patrick Maxon on February 2, 2009 at the SCCIC indicated that no cultural resources sites have been previously recorded and/or evaluated on the property. The Panorama City Historic District is recorded approximately one-mile west of the project area.

Paleontological Resources Records Search

A paleontological records search was requested of Dr. Sam McLeod at the Los Angeles County Museum Vertebrate Paleontology Department. A response was mailed to BonTerra Consulting on March 4, 2009. No vertebrate fossil localities are known on the project area, but there are fossil localities nearby from the same or similar sedimentary units that occur in the project area.

The entire project area is underlain by surficial deposits of younger Quaternary Alluvium, derived primarily as fluvial deposits from Tujunga Wash that flows through the project area. These units do not typically contain significant vertebrate fossils. But younger alluvial units are typically underlain by older Quaternary deposits that do contain significant fossils.

If excavation will penetrate the older Quaternary deposits, careful monitoring, to quickly and professionally collect exposed fossils, should be undertaken. Collected fossils should be deposited in an accredited and permanent scientific institution (McLeod 2009).

Native American Scoping

A Sacred Lands File Search was requested of the NAHC. The search failed to indicate the presence of Native American cultural resources within the project area; however, sacred sites were identified in close proximity to the project. The NAHC suggested early consultation with local Native American tribes. The NAHC also provided BonTerra Consulting with a list of Native American individuals/organizations that may have knowledge of cultural resources in the project area. All individuals and tribes on the list were mailed a letter affording them an opportunity to comment on the project and share any knowledge they have of cultural resources in the project vicinity. As of this date, no response has been received.

Field Reconnaissance

On February 11, 2009, BonTerra Consulting archaeologist Patrick Maxon, and Department of Water and Power staff, Art Castro and Harold Messinger, toured the Spreading Grounds project area by automobile. Each of the basins was visited, as well as the areas proposed for upgrades to the current intake facility, and areas of new construction. No significant cultural resources were noted as a result of the survey.

Management Recommendations

Since the existing facility buildings and structures will not be removed, and they do not appear to be of sufficient age, there would be no significant impacts to historic resources. The only elements of the project that may have the potential to impact cultural resources are during excavations for new intake facilities and during expansion and deepening of the basins.

During the original construction of the Spreading Grounds and surrounding infrastructure, it is unlikely that cultural resources studies were performed. Additionally, it is likely that existing structures, streets, parking lots, etc. were built without the benefit of cultural resources monitoring. Therefore, undisturbed resources may remain under existing development. In order to ensure that potential impacts to cultural resources are less than significant, the following mitigation measures are recommended:

(1) If the proposed project will disturb native alluvial sediments (as opposed to man-made fill, stockpile, etc.), a qualified Archaeologist shall be retained to monitor construction activities in those areas deemed sensitive for archaeological resources. Should archaeological resources be encountered during earth-moving activities (i.e., grading and excavation), a qualified Archaeologist shall implement procedures for temporarily halting or redirecting work to permit the sampling, identification, and evaluation of the resources, as appropriate. If the resources are found to be significant, the Archaeologist shall determine appropriate actions—in cooperation with the City of Los Angeles—for

preservation and/or data recovery. If the monitor determines that the sediments are not sensitive for the presence of resources, monitoring efforts can be terminated.

(2) If the proposed project will disturb bedrock formations that are sensitive for paleontological resources, a qualified Paleontologist shall be retained to monitor construction activities in those areas. Should paleontological resources be encountered during earth-moving activities (i.e., grading and excavation), the Paleontologist shall implement procedures for temporarily halting or redirecting work to permit the sampling, identification, and evaluation of the resources, as appropriate. If the resources are found to be significant, the Paleontologist shall determine appropriate actions—in cooperation with the City of Los Angeles—for preservation and/or data recovery. If the Paleontologist determines that the sediments are not sensitive for the presence of resources, monitoring efforts can be terminated.

A qualified, cross-trained monitor can be retained to monitor for both cultural and paleontological resources.

R:\PAS\Projects\MWatson\J009\Tujunga\Tujunga Cultural Memo-031909.doc

APPENDIX B

NOP Letters

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN, JR., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, REGIONAL PLANNING
IGR/CEQA BRANCH
100 MAIN STREET, MS # 16
LOS ANGELES, CA 90012-3606
PHONE: (213) 897-9140
FAX: (213) 897-1337

Flex your power!
Be energy efficient!

February 17, 2012

IGR/CEQA No. 120223AL, NOP
Tujunga Spreading Grounds Enhancement Project
Vic. LA-05/PM 36.34, LA-170/PM R19.72
SCH # 2012021028

Mr. Hal Messinger
City of Los Angeles
111 North Hope Street
Los Angeles, CA 90012

Dear Mr. Messinger:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project. The proposed enhancement project for Tujunga Spreading Grounds (TSG) will alter the current intake facility to capture low flows; create a treatment area for the low flows; install two new intake facilities to capture high flows from the Tujunga Wash and Pacoima Wash Diversion Channels; install devices to prevent widespread distribution of trash within the TSG; reactivate, deepen and/or combine basins to increase the facility's storage and recharge capacity; install new inter-basin flow controls; and install telemetry on all diversion facilities. The objective of the Tujunga Spreading Grounds Enhancement Project is to increase stormwater recharge into the San Fernando Groundwater Basin through enhancement and operation of the TSG facility.

To assist in our efforts to evaluate the impacts of this project on State Transportation Facilities, please forward a copy of a construction traffic study for our review, if one has been prepared. Otherwise, a new construction traffic study should be prepared to analyze the following information:

1. Traffic impacts on Interstate 5 and State Routes 170, and all significantly impacted streets, crossroads and controlling intersections, as well as analysis of existing condition and construction periods.
2. A truck/traffic construction management plan is needed for this project. Please submit it for Caltrans' review.
3. Traffic volume counts to include anticipated AM and PM peak-hour volumes.
4. Level of service (LOS) before and during the construction.
5. A brief construction traffic discussion showing ingress/egress, turning movements and a directional flow for construction vehicle trips on State facilities.
6. Discussion of mitigation measures appropriate to alleviate anticipated traffic impacts, including sharing of mitigation costs.

We look forward to reviewing the traffic study. We expect to receive a copy from the State Clearinghouse when the DEIR is completed. However, to expedite the review process, and clarify any misunderstandings, you may send a copy in advance to the undersigned.

If you have any questions, please feel free to contact me at (213) 897-9140 or Alan Lin the project coordinator at (213) 897-8391 and refer to IGR/CEQA No. 120223AL.

Sincerely,

Dianna Watson

DIANNA WATSON
IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse

STATE OF CALIFORNIA **Edmund G. Brown Jr., Governor**

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
(916) 657-5390 - Fax

February 21, 2012

Hal Messinger
City of Los Angeles
111 North Hope Street
Los Angeles, CA 90012

RE: SCH# 2012021028 Tujunga Spreding Grounds Enhancement Project; Los Angeles County

Dear Mr. Messinger:

The Native American Heritage Commission has reviewed the Notice of Preparation (NOP) regarding the above referenced project. The California Environmental Quality Act (CEQA) states that any project that causes a substantial adverse change in the significance of an historical resource, which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA guidelines 15064(b)). To adequately comply with this provision 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 public 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. **Sacred Lands File check completed, no sites indicated.**
    - 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,

Katy Sanchez

Katy Sanchez
Program Analyst
(916) 653-4040

cc: State Clearinghouse

Native American Contact List
Los Angeles County
February 21, 2012

LA City/County Native American Indian Comm
Ron Andrade, Director
3175 West 6th St, Rm. 403
Los Angeles , CA 90020
randrade@css.lacounty.gov
(213) 351-5324
(213) 386-3995 FAX

Gabrielino Tongva Nation
Sam Dunlap, Chairperson
P.O. Box 86908 Gabrielino Tongva
Los Angeles , CA 90086
samdunlap@earthlink.net
(909) 262-9351 - cell

Ti'At Society/Inter-Tribal Council of Pimu
Cindi M. Alvitre, Chairwoman-Manisar
3098 Mace Avenue, Apt. D Gabrielino
Costa Mesa, , CA 92626
calvitre@yahoo.com
(714) 504-2468 Cell

Gabrielino Tongva Indians of California Tribal Council
Robert F. Dorame, Tribal Chair/Cultural Resources
P.O. Box 490 Gabrielino Tongva
Bellflower , CA 90707
gtongva@verizon.net
562-761-6417 - voice
562-761-6417- fax

Tongva Ancestral Territorial Tribal Nation
John Tommy Rosas, Tribal Admin.
Private Address Gabrielino Tongva
,
tattnlaw@gmail.com
310-570-6567

Gabrielino-Tongva Tribe
Bernie Acuna
1875 Century Pk East #1500 Gabrielino
Los Angeles , CA 90067
(619) 294-6660-work
(310) 428-5690 - cell
(310) 587-0170 - FAX
bacuna1@gabrieinotribe.org

Gabrieleno/Tongva San Gabriel Bnd Mission Indians
Anthony Morales, Chairperson
PO Box 693 Gabrielino Tongva
San Gabriel , CA 91778
GTTribalcouncil@aol.com
(626) 286-1632
(626) 286-1758 - Home
(626) 483--3564 cell
(626) 286-1262 -FAX

Gabrielino-Tongva Tribe
Linda Candelaria, Chairwoman
1875 Century Pk East #1500 Gabrielino
Los Angeles , CA 90067
lcandelaria1@gabrielinoTribe.org
626-676-1184- cell
(310) 587-0170 - FAX
760-904-6533-home

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the 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 regard to cultural resources for the proposed SCH# 2012021028 Tujunga Spreding Grounds Enhancement Project; Los Angeles County.

Native American Contact List
Los Angeles County
February 21, 2012

Gabrieleno Band of Mission Indians
Andrew Salas, Chairperson
P.O. Box 393 Gabrielino
Covina , CA 91723
(626) 926-4131
gabrielenoindians@yahoo.com

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the 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 regard to cultural resources for the proposed SCH# 2012021028 Tujunga Spreding Grounds Enhancement Project; Los Angeles County.

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 • www.aqmd.gov

March 7, 2012

Hal Messinger
Los Angeles Department of Water and Power
111 North Hope Street, Room 1044
Los Angeles, CA 90012

Notice of Preparation of a CEQA Document for the Tujunga Spreading Grounds Enhancement Project

The South Coast Air Quality Management District (SCAQMD) appreciates the opportunity to comment on the above-mentioned document. The SCAQMD's comments are recommendations regarding the analysis of potential air quality impacts from the proposed project that should be included in the draft CEQA document. Please send the SCAQMD a copy of the Draft EIR upon its completion. Note that copies of the Draft EIR that are submitted to the State Clearinghouse are not forwarded to the SCAQMD. Please forward a copy of the Draft EIR directly to SCAQMD at the address in our letterhead. **In addition, please send with the draft EIR all appendices or technical documents related to the air quality and greenhouse gas analyses and electronic versions of all air quality modeling and health risk assessment files. These include original emission calculation spreadsheets and modeling files (not Adobe PDF files). Without all files and supporting air quality documentation, the SCAQMD will be unable to complete its review of the air quality analysis in a timely manner. Any delays in providing all supporting air quality documentation will require additional time for review beyond the end of the comment period.**

Air Quality Analysis

The SCAQMD 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 SCAQMD recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analysis. Copies of the Handbook are available from the SCAQMD's Subscription Services Department by calling (909) 396-3720. The lead agency may wish to consider using land use emissions estimating software such as URBEMIS 2007 or the recently released CalEEMod. These models are available on the SCAQMD Website at: http://www.aqmd.gov/ceqa/models.html.

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 (including demolition, if any) and operations should be calculated. 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 analysis.

The SCAQMD has developed a methodology for calculating PM2.5 emissions from construction and operational activities and processes. In connection with developing PM2.5 calculation methodologies, the SCAQMD has also developed both regional and localized significance thresholds. The SCAQMD requests that the lead agency quantify PM2.5 emissions and compare the results to the recommended PM2.5 significance thresholds. Guidance for calculating PM2.5 emissions and PM2.5 significance thresholds can be found at the following internet address: http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html.

In addition to analyzing regional air quality impacts the SCAQMD recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). LST's can be used in addition to the recommended regional significance thresholds as a second indication of air quality impacts when preparing a CEQA document. Therefore, when preparing the air quality analysis for the proposed project, it is recommended that the lead agency perform a localized significance analysis by either using the LSTs developed by the SCAQMD or performing dispersion modeling as necessary. Guidance for performing a localized air quality analysis can be found at http://www.aqmd.gov/ceqa/handbook/LST/LST.html.

In the event that the proposed project generates or attracts vehicular trips, especially heavy-duty diesel-fueled vehicles, it is recommended that the lead agency perform a mobile source health risk assessment. Guidance for performing a mobile source health risk assessment ("Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis") can be found on the SCAQMD's CEQA web pages at the following internet address: http://www.aqmd.gov/ceqa/handbook/mobile_toxic/mobile_toxic.html. 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 that go beyond what is required by law 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 SCAQMD CEQA Air Quality Handbook for sample air quality mitigation measures. Additional mitigation measures can be found on the SCAQMD's CEQA web pages at the following internet address: www.aqmd.gov/ceqa/handbook/mitigation/MM_intro.html Additionally, SCAQMD'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. Other measures to reduce air quality impacts from land use projects can be found in the SCAQMD's Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. This document can be found at the following internet address: http://www.aqmd.gov/prdas/aqguide/aqguide.html. In addition, guidance on siting incompatible land uses can be found in the California Air Resources Board's Air Quality and Land Use Handbook: A Community Perspective, which can be found at the following internet address: http://www.arb.ca.gov/ch/handbook.pdf. CARB's Land Use Handbook is a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. Pursuant to state CEQA Guidelines §15126.4 (a)(1)(D), any impacts resulting from mitigation measures must also be discussed.

Data Sources

SCAQMD rules and relevant air quality reports and data are available by calling the SCAQMD's Public Information Center at (909) 396-2039. Much of the information available through the Public Information Center is also available via the SCAQMD's World Wide Web Homepage (http://www.aqmd.gov).

The SCAQMD is willing to work with the Lead Agency to ensure that project-related emissions are accurately identified, categorized, and evaluated. If you have any questions regarding this letter, please call Ian MacMillan, Program Supervisor, CEQA Section, at (909) 396-3244.

Sincerely,

Ian MacMillan
Program Supervisor, CEQA Inter-Governmental Review
Planning, Rule Development & Area Sources

IM
LAC120215-02
Control Number

APPENDIX C

Air Pollutant Emissions Calculations and Dust Mitigation Measures Tujunga Spreading Grounds Enhancement Project

[Health Risk Assessment calculations are available from LADWP.]

Table C-1
Construction Heavy Equipment Emissions - Spreading Basins
Tujunga Spreading Grounds

Spreading Basins

			Emission Factors													Emissions								
Equipment/Phase	**FUEL**	**HP**	**ROG (lb/hr)**	**CO (lb/hr)**	**NOX (lb/hr)**	**SOX (lb/hr)**	**PM10 (lb/hr)**	**PM2.5 (lb/hr)**	**CO2 (lb/hr)**	**CH4 (lb/hr)**	**N2O (lb/hr)**	**No of Equipment**	**Work Areas**	**Hrs Per Day**	**Total Days in Service**	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**
Clear and Grub																								
Bulldozer	DIESEL	1000	0.7496	3.4322	7.4509	0.0060	0.2591	0.2305918	591.8938	0.0676	0.7078	2	4	8	680	47.98	219.66	476.86	0.38	16.58	14.76	37881.21	4.33	45.30
Excavator	DIESEL	750	0.2895	0.8731	2.5290	0.0039	0.0871	0.0775448	387	0.0261	0.2403	4	4	8	680	37.06	111.75	323.71	0.50	11.15	9.93	49589.06	3.34	30.75
CAT 416 Rubber Tire Loader	DIESEL	750	0.3850	1.3084	3.6184	0.0049	0.1276	0.1135419	485.5	0.0347	0.3438	2	4	8	680	24.64	83.74	231.58	0.31	8.16	7.27	31073.83	2.22	22.00
Water Truck	DIESEL	175	0.1441	0.7580	1.0305	0.0014	0.0602	0.0535734	125.1	0.0130	0.0979	1	4	8	680	4.61	24.26	32.97	0.05	1.93	1.71	4002.81	0.42	3.13
Dump/Haul Truck	DIESEL	500	0.2170	0.6362	1.7865	0.0027	0.0634	0.0563826	272.3	0.0196	0.1697	4	4	8	680	27.77	81.43	228.67	0.34	8.11	7.22	34858.73	2.51	21.72
Subtotal																**142.06**	**520.84**	**1293.79**	**1.58**	**45.93**	**40.88**	**157405.64**	**12.82**	**122.91**
Excavation																								
Bulldozer	DIESEL	1000	0.7496	3.4322	7.4509	0.0060	0.2591	0.2305918	591.8938	0.0676	0.7078	2	4	8	312	47.98	219.66	476.86	0.38	16.58	14.76	37881.21	4.33	45.30
CAT 416 Rubber Tire Loader	DIESEL	750	0.3850	1.3084	3.6184	0.0049	0.1276	0.1135419	485.5	0.0347	0.3438	2	4	8	312	24.64	83.74	231.58	0.31	8.16	7.27	31073.83	2.22	22.00
Excavator	DIESEL	750	0.2895	0.8731	2.5290	0.0039	0.0871	0.0775448	387	0.0261	0.2403	1	4	8	312	9.26	27.94	80.93	0.12	2.79	2.48	12397.27	0.84	7.69
Subtotal																**81.88**	**331.33**	**789.36**	**0.82**	**27.53**	**24.51**	**81352.30**	**7.39**	**74.99**
Berm Building and Bottom Shaping																								
Bulldozer	DIESEL	500	0.3211	1.4228	2.7305	0.0026	0.1133	0.1008544	264.8725	0.0290	0.2594	1	4	8	312	10.28	45.53	87.38	0.08	3.63	3.23	8475.92	0.93	8.30
Scraper	DIESEL	750	0.5525	2.0861	4.9949	0.0056	0.1918	0.1706614	555.2766	0.0499	0.4745	2	4	8	312	35.36	133.51	319.68	0.36	12.27	10.92	35537.70	3.19	30.37
Road Grader/Blade	DIESEL	500	0.1855	0.6289	1.6842	0.0023	0.0608	0.0541153	229	0.0167	0.1600	1	4	8	312	5.94	20.13	53.90	0.07	1.95	1.73	7343.50	0.54	5.12
Sweeper	DIESEL	120	0.1107	0.5147	0.6989	0.0009	0.0622	0.0553885	75.0	0.0100	0.0664	2	4	8	312	7.09	32.94	44.73	0.06	3.98	3.54	4802.57	0.64	4.25
Subtotal																**58.66**	**232.10**	**505.68**	**0.57**	**21.83**	**19.43**	**56159.69**	**5.29**	**48.04**
Total																**142.06**	**520.84**	**1293.79**	**1.58**	**45.93**	**40.88**	**157405.64**	**12.82**	**122.91**

Emission, tons (total)

Equipment/Phase	**FUEL**	**HP**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Clear and Grub											
Bulldozer			4.078	18.671	40.533	0.032	1.409	1.254	3219.903	0.368	3.851
Excavator			3.150	9.499	27.515	0.042	0.948	0.844	4215.070	0.284	2.614
CAT 416 Rubber Tire Loader			2.094	7.118	19.684	0.027	0.694	0.618	2641.276	0.189	1.870
Water Truck			0.392	2.062	2.803	0.004	0.164	0.146	340.239	0.035	0.266
Dump/Haul Truck			2.360	6.922	19.437	0.029	0.689	0.613	2962.992	0.213	1.847
Subtotal			**12.075**	**44.271**	**109.972**	**0.134**	**3.904**	**3.475**	**13379.480**	**1.090**	**10.447**
Excavation											
Bulldozer			1.871	8.567	18.598	0.015	0.647	0.576	1477.367	0.169	1.767
CAT 416 Rubber Tire Loader			0.961	3.266	9.032	0.012	0.318	0.283	1211.879	0.087	0.858
Excavator			0.361	1.090	3.156	0.005	0.109	0.097	483.493	0.033	0.300
Subtotal			**3.193**	**12.922**	**30.785**	**0.032**	**1.074**	**0.956**	**3172.740**	**0.288**	**2.925**
Berm Building and Bottom Shaping											
Bulldozer			0.401	1.776	3.408	0.003	0.141	0.126	330.561	0.036	0.324
Scraper			1.379	5.207	12.467	0.014	0.479	0.426	1385.970	0.124	1.184
Road Grader/Blade			0.232	0.785	2.102	0.003	0.076	0.068	286.396	0.021	0.200
Sweeper			0.276	1.285	1.744	0.002	0.155	0.138	187.300	0.025	0.166
Subtotal			**2.288**	**9.052**	**19.721**	**0.022**	**0.851**	**0.758**	**2190.228**	**0.206**	**1.874**
Total			**17.56**	**66.25**	**160.48**	**0.19**	**5.83**	**5.19**	**18742.45**	**1.58**	**15.25**

Assumptions - 4 working areas active simultaneously

Table C-2
Construction Heavy Equipment Emissions - Intakes and Overflow
Tujunga Spreading Grounds

Intakes and Overflow

			Emission Factors												Emissions								
Equipment/Phase	**FUEL**	**HP**	**ROG (lb/hr)**	**CO (lb/hr)**	**NOX (lb/hr)**	**SOX (lb/hr)**	**PM10 (lb/hr)**	**PM2.5 (lb/hr)**	**CO2 (lb/hr)**	**CH4 (lb/hr)**	**N2O (lb/hr)**	**No of Equipment**	**Hrs Per Day**	**Days in Service**	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**
Cut and Demo Concrete Slabs and Walls																							
Air Compressor	DIESEL	500	0.1626	0.5399	1.7639	0.0023	0.0570	0.0507485	231.7	0.0147	0.1676	1	8	20	1.30	4.32	14.11	0.02	0.46	0.41	1853.93	0.12	1.34
Concrete Cutting Trucks	DIESEL	175	0.1441	0.7580	1.0305	0.0014	0.0602	0.0535734	125.1	0.0130	0.0979	1	8	20	1.15	6.06	8.24	0.01	0.48	0.43	1000.70	0.10	0.78
Excavator	DIESEL	250	0.1242	0.3541	1.1360	0.0018	0.0372	0.0331371	159	0.0112	0.1079	1	8	20	0.99	2.83	9.09	0.01	0.30	0.27	1269.46	0.09	0.86
CAT 416 Rubber Tire Loader	DIESEL	250	0.1259	0.3685	1.2125	0.0017	0.0417	0.0371039	149.0	0.0114	0.1152	1	8	20	1.01	2.95	9.70	0.01	0.33	0.30	1191.81	0.09	0.92
Subtotal															**4.45**	**16.16**	**41.14**	**0.06**	**1.57**	**1.40**	**5315.91**	**0.40**	**3.91**
Prep Footings and Slabs																							
Backhoe - Excavator Bucket	DIESEL	250	0.1204	0.3666	1.1658	0.0019	0.0370	0.0329286	171.7	0.0109	0.1108	1	8	20	0.96	2.93	9.33	0.02	0.30	0.26	1373.90	0.09	0.89
Backhoe - Skip Bucket	DIESEL	120	0.0694	0.3529	0.4565	0.0006	0.0383	0.0340819	51.7	0.0063	0.0434	1	8	20	0.56	2.82	3.65	0.00	0.31	0.27	413.82	0.05	0.35
Roller/Compactor	DIESEL	50	0.1025	0.2911	0.2583	0.0003	0.0245	0.0217726	26.0	0.0092	0.0245	1	4	20	0.41	1.16	1.03	0.00	0.10	0.09	103.93	0.04	0.10
Subtotal															**1.93**	**6.92**	**14.01**	**0.02**	**0.70**	**0.62**	**1891.65**	**0.17**	**1.33**
Delivery Wood Forming Materials																							
N/A																							
Subtotal															**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Deliver & Install Rebar Materials																							
N/A																							
Subtotal															**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Form Walls																							
Forklift	DIESEL	175	0.1352	0.7256	1.0448	0.0014	0.0592	0.0526958	124.9	0.0122	0.0993	1	4	20	0.54	2.90	4.18	0.01	0.24	0.21	499.60	0.05	0.40
Subtotal														20	**0.54**	**2.90**	**4.18**	**0.01**	**0.24**	**0.21**	**499.60**	**0.05**	**0.40**
														20									
Pour Concrete																							
Concrete Trucks	DIESEL	235	0.1400	0.3837	1.2373	0.0019	0.0412	0.0367012	166.5	0.0126	0.1175	1	4	20	0.56	1.53	4.95	0.01	0.16	0.15	666.18	0.05	0.47
Subtotal															**0.56**	**1.53**	**4.95**	**0.01**	**0.16**	**0.15**	**666.18**	**0.05**	**0.47**
Deliver & Install Trash Screen																							
Forklift	DIESEL	175	0.1352	0.7256	1.0448	0.0014	0.0592	0.0526958	124.9	0.0122	0.0993	1	4	20	0.54	2.90	4.18	0.01	0.24	0.21	499.60	0.05	0.40
Subtotal															**0.54**	**2.90**	**4.18**	**0.01**	**0.24**	**0.21**	**499.60**	**0.05**	**0.40**
Total															**4.45**	**16.16**	**41.14**	**0.06**	**1.57**	**1.40**	**5315.91**	**0.40**	**3.91**

			Emission, tons (total)								
Equipment/Phase	**FUEL**	**HP**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Cut and Demo Concrete Slabs and Walls											
Air Compressor			0.013	0.043	0.141	0.000	0.005	0.004	18.539	0.001	0.013
Concrete Cutting Trucks			0.012	0.061	0.082	0.000	0.005	0.004	10.007	0.001	0.008
Excavator			0.010	0.028	0.091	0.000	0.003	0.003	12.695	0.001	0.009
CAT 416 Rubber Tire Loader			0.010	0.029	0.097	0.000	0.003	0.003	11.918	0.001	0.009
Subtotal			**0.045**	**0.162**	**0.411**	**0.001**	**0.016**	**0.014**	**53.159**	**0.004**	**0.039**
Prep Footings and Slabs											
Backhoe - Excavator Bucket			0.010	0.029	0.093	0.000	0.003	0.003	13.739	0.001	0.009
Backhoe - Skip Bucket			0.006	0.028	0.037	0.000	0.003	0.003	4.138	0.001	0.003
Roller/Compactor			0.004	0.012	0.010	0.000	0.001	0.001	1.039	0.000	0.001
Subtotal			**0.019**	**0.069**	**0.140**	**0.000**	**0.007**	**0.006**	**18.917**	**0.002**	**0.013**
Delivery Wood Forming Materials											
N/A			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Subtotal			**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Deliver & Install Rebar Materials											
N/A			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Subtotal			**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Form Walls											
Forklift			0.005	0.029	0.042	0.000	0.002	0.002	4.996	0.000	0.004
Subtotal			**0.005**	**0.029**	**0.042**	**0.000**	**0.002**	**0.002**	**4.996**	**0.000**	**0.004**
Pour Concrete											
Concrete Trucks			0.006	0.015	0.049	0.000	0.002	0.001	6.662	0.001	0.005
Subtotal			**0.006**	**0.015**	**0.049**	**0.000**	**0.002**	**0.001**	**6.662**	**0.001**	**0.005**
Deliver & Install Trash Screen											
Forklift			0.005	0.029	0.042	0.000	0.002	0.002	4.996	0.000	0.004
Subtotal			**0.005**	**0.029**	**0.042**	**0.000**	**0.002**	**0.002**	**4.996**	**0.000**	**0.004**
Total			**0.08**	**0.30**	**0.68**	**0.00**	**0.03**	**0.03**	**88.73**	**0.01**	**0.07**

Table C-3
Construction Heavy Equipment Emissions - RCP Interbasin Conduits
Tujunga Spreading Grounds

RCP Interbasin Conduits

			Emission Factors												Emissions								
Equipment/Phase	FUEL	HP	ROG (lb/hr)	CO (lb/hr)	NOX (lb/hr)	SOX (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)	CO2 (lb/hr)	CH4 (lb/hr)	N2O (lb/hr)	No of Equipment	Hrs Per Day	Days in Service	ROG lbs/day	CO lbs/day	NOX lbs/day	SOX lbs/day	PM10 lbs/day	PM2.5 lbs/day	CO2 lbs/day	CH4 lbs/day	N2O lbs/day
Deliver RCP and Unload																							
Forklift	DIESEL	175	0.1352	0.7256	1.0448	0.0014	0.0592	0.0526958	124.9	0.0122	0.0993	1	8	8	1.08	5.80	8.36	0.01	0.47	0.42	999.20	0.10	0.79
Subtotal															**1.08**	**5.80**	**8.36**	**0.01**	**0.47**	**0.42**	**999.20**	**0.10**	**0.79**
Install RCP - Dig, Lay, & Backfill																							
Excavator	DIESEL	500	0.1735	0.5271	1.4763	0.0023	0.0516	0.0459342	234	0.0157	0.1402	2	8	16	2.78	8.43	23.62	0.04	0.83	0.73	3739.77	0.25	2.24
CAT 416 Rubber Tire Loader	DIESEL	250	0.1259	0.3685	1.2125	0.0017	0.0417	0.0371039	149.0	0.0114	0.1152	2	8	16	2.01	5.90	19.40	0.03	0.67	0.59	2383.63	0.18	1.84
Forklift	DIESEL	175	0.1352	0.7256	1.0448	0.0014	0.0592	0.0526958	124.9	0.0122	0.0993	2	8	16	2.16	11.61	16.72	0.02	0.95	0.84	1998.39	0.20	1.59
Subtotal															**6.95**	**25.94**	**59.74**	**0.09**	**2.44**	**2.17**	**8121.79**	**0.63**	**5.68**
Total															**6.95**	**25.94**	**59.74**	**0.09**	**2.44**	**2.17**	**8121.79**	**0.63**	**5.68**

Emission, tons (total)

Equipment/Phase	FUEL	HP	ROG tons (total)	CO tons (total)	NOX tons (total)	SOX tons (total)	PM10 tons (total)	PM2.5 tons (total)	CO2 tons (total)	CH4 tons (total)	N2O tons (total)
Deliver RCP and Unload											
Forklift			0.004	0.023	0.033	0.000	0.002	0.002	3.997	0.000	0.003
Subtotal			**0.004**	**0.023**	**0.033**	**0.000**	**0.002**	**0.002**	**3.997**	**0.000**	**0.003**
Install RCP - Dig, Lay, & Backfill											
Excavator			0.022	0.067	0.189	0.000	0.007	0.006	29.918	0.002	0.018
CAT 416 Rubber Tire Loader			0.016	0.047	0.155	0.000	0.005	0.005	19.069	0.001	0.015
Forklift			0.017	0.093	0.134	0.000	0.008	0.007	15.987	0.002	0.013
Subtotal			**0.056**	**0.208**	**0.478**	**0.001**	**0.020**	**0.017**	**64.974**	**0.005**	**0.045**
Total			**0.06**	**0.23**	**0.51**	**0.00**	**0.02**	**0.02**	**68.97**	**0.01**	**0.05**

Table C-4
Construction and Operations Worker Commute Emission Calculations
Tujunga Spreading Grounds

Construction Phase	Vehicle Class	No. of Daily Workers Per Construction Phase	Speed (mph)	VMT (mi/vehicle-day)	CO	NO$_X$	ROG	SOx	PM10			PM2.5			CO2	CH4	N2O
					Running Exhaust (g/mi)	Running Exhaust (g/mi)	Running Exhaust (g/mi)	Running Exhaust (g/mi)	Running Exhaust (g/mi)	Tire Wear (g/mi)	Brake Wear (g/mi)	Running Exhaust (g/mi)	Tire Wear (g/mi)	Brake Wear (g/mi)	Running Exhaust (g/mi)	Running Exhaust (g/mi)	Running Exhaust (g/mi)
Spreading Basins	Light-Duty Truck, catalyst	16	35	40	4.407691	0.420622	0.144917	0.004048	0.005815	0.008	0.013	0.005284	0.002	0.005	352.8876	0.00739	0.02
Intakes and Overflow	Light-Duty Truck, catalyst	16	35	40	4.407691	0.420622	0.144917	0.004048	0.005815	0.008	0.013	0.005284	0.002	0.005	352.8876	0.00739	0.02
RCP Interbasin Conduits	Light-Duty Truck, catalyst	16	35	40	4.407691	0.420622	0.144917	0.004048	0.005815	0.008	0.013	0.005284	0.002	0.005	352.8876	0.00739	0.02

EMFAC2011 emission factors for 2013
Assume startup after 8 hours
Assume 45 minutes run time total

Construction Phase	Vehicle Class	No. of Daily Workers Per Construction Phase	Speed (mph)	VMT (mi/vehicle-day)	Emissions, lbs/day												Total Emissions, tons										
					CO	NOx	VOCs	SOx	PM10	PM2.5	Paved Road Fugitive Dust PM10	Paved Road Fugitive Dust PM2.5	CO2	CH4	N2O	Construction Days	CO	NOx	VOCs	SOx	PM10	PM2.5	Paved Road Fugitive Dust PM10	Paved Road Fugitive Dust PM2.5	CO2	CH4	N2O
Spreading Basins	Light-Duty Truck, catalyst	16	35	40	6.22	0.59	0.20	0.01	0.04	0.02	0.07	0.03	497.91	0.01	0.02	680	1.06	0.10	0.03476	9.71E-04	0.00643	0.00295	0.01228	0.00503	85	0.00177	0.00420
Intakes and Overflow	Light-Duty Truck, catalyst	16	35	40	6.22	0.59	0.20	0.01	0.04	0.02	0.07	0.03	497.91	0.01	0.02	60	0.09	0.01	0.00307	8.57E-05	0.00057	0.00026	0.00108	0.00044	7	0.00016	0.00037
RCP Interbasin Conduits	Light-Duty Truck, catalyst	16	35	40	6.22	0.59	0.20	0.01	0.04	0.02	0.07	0.03	497.91	0.01	0.02	40	0.06	0.01	0.00204	5.71E-05	0.00038	0.00017	0.00072	0.00030	5	0.00010	0.00025

Table C-5
Construction Truck Trip Emissions
Tujunga Spreading Grounds

			Speed	VMT	CO	NO_X	ROG	SOx	PM10			PM2.5			CO2	CH4	N2O	Emissions, lbs/day												Total Emissions, tons										
Phase/Vehicles	Vehicle Class	Peak No. of Trucks per day	(mph)	(mi/vehicle-day)	Running Exhaust (g/mi)	Running Exhaust (g/mi)	Running Exhaust (g/mi)	Running Exhaust (g/mi)	Running Exhaust (g/mi)	Tire Wear (g/mi)	Brake Wear (g/mi)	Running Exhaust (g/mi)	Tire Wear (g/mi)	Brake Wear (g/mi)	Running Exhaust (g/mi)	Running Exhaust (g/mi)	Running Exhaust (g/mi)	CO	NOx	VOCs	SOx	PM10	PM2.5	Paved Road Fugitive Dust PM10	Paved Road Fugitive Dust PM2.5	CO2	CH4	N2O	Construction Days/Total Deliveries	CO	NOx	VOCs	SOx	PM10	PM2.5	Paved Road Fugitive Dust PM10	Paved Road Fugitive Dust PM2.5	CO2	CH4	N2O
Spreading Basins																																								
Clear and Grub																																								
3/4 Ton Truck, Pick-Up	Light Duty Truck 1, Diesel	2	35	30	0.501104629	0.820309	0.126778561	0.003186	0.107197	0.007999958	0.036749816	0.098621	0.00199999	0.01574992	326.7179	0.005888621	0.03	0.07	0.11	0.02	0.00	0.02	0.02	0.01	0.00	43.22	0.00	0.00	680	0.02	0.04	0.01	0.00	0.01	0.01	0.00	0.00	14.69	0.00	0.00
Subtotal																		**0.07**	**0.11**	**0.02**	**0.00**	**0.02**	**0.02**	**0.01**	**0.00**	**43.22**	**0.00**	**0.00**		**0.02**	**0.04**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**14.69**	**0.00**	**0.00**
Excavation																																								
3/4 Ton Truck, Pick-Up	Light Duty Truck 1, Diesel	4	35	30	0.501104629	0.820309	0.126778561	0.003186	0.107197	0.007999958	0.036749816	0.098621	0.00199999	0.01574992	326.7179	0.005888621	0.03	0.13	0.22	0.03	0.00	0.04	0.03	0.01	0.00	86.44	0.00	0.01	680	0.05	0.07	0.01	0.00	0.01	0.01	0.00	0.00	29.39	0.00	0.00
Haul Trucks	Heavy Duty Truck, Diesel	128	30	4	2.554308845	11.0003	0.639724474	0.010712	0.320779	0.011999937	0.130339319	0.295116	0.00299998	0.05585971	1875.156	0.029713727	0.33	2.88	12.42	0.72	0.01	0.52	0.40	0.05	0.01	2116.62	0.03	0.37	680	0.98	4.22	0.25	0.00	0.18	0.14	0.02	0.00	719.65	0.01	0.13
Subtotal																		**3.02**	**12.63**	**0.76**	**0.01**	**0.56**	**0.43**	**0.06**	**0.01**	**2203.06**	**0.04**	**0.38**		**1.03**	**4.30**	**0.26**	**0.00**	**0.19**	**0.15**	**0.02**	**0.00**	**749.04**	**0.01**	**0.13**
Berm Building																																								
N/A																																								
Subtotal																		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	680	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Maximum daily/Total																		**3.02**	**12.63**	**0.76**	**0.01**	**0.56**	**0.43**	**0.06**	**0.01**	**2203.06**	**0.04**	**0.38**		**1.05**	**4.33**	**0.26**	**0.00**	**0.20**	**0.15**	**0.02**	**0.00**	**763.73**	**0.01**	**0.13**
Intakes and Overflow																																								
Cut and Demo Concrete Slabs and Walls																																								
3/4 Ton Truck, Pick-Up	Light Duty Truck 1, Diesel	4	35	30	0.501104629	0.820309	0.126778561	0.003186	0.107197	0.007999958	0.036749816	0.098621	0.00199999	0.01574992	326.7179	0.005888621	0.03	0.13	0.22	0.03	0.00	0.04	0.03	0.01	0.00	86.44	0.00	0.01	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.00	0.00
Haul Trucks	Heavy Duty Truck, Diesel	4	30	40	2.554308845	11.0003	0.639724474	0.010712	0.320779	0.011999937	0.130339319	0.295116	0.00299998	0.05585971	1875.156	0.029713727	0.33	0.90	3.88	0.23	0.00	0.16	0.12	0.02	0.00	661.45	0.01	0.12	20	0.01	0.04	0.00	0.00	0.00	0.00	0.00	0.00	6.61	0.00	0.00
Subtotal																		**1.03**	**4.10**	**0.26**	**0.00**	**0.20**	**0.16**	**0.03**	**0.01**	**747.88**	**0.01**	**0.13**		**0.01**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**7.48**	**0.00**	**0.00**
Prep Footings & Slabs																																								
Delivery Trucks	Heavy Duty Truck, Diesel	32	30	40	2.554308845	11.0003	0.639724474	0.010712	0.320779	0.011999937	0.130339319	0.295116	0.00299998	0.05585971	1875.156	0.029713727	0.33	7.21	31.04	1.81	0.03	1.31	1.00	0.13	0.03	5291.56	0.08	0.94	60	0.22	0.93	0.05	0.00	0.04	0.03	0.00	0.00	158.75	0.00	0.03
Subtotal																		**7.21**	**31.04**	**1.81**	**0.03**	**1.31**	**1.00**	**0.13**	**0.03**	**5291.56**	**0.08**	**0.94**		**0.22**	**0.93**	**0.05**	**0.00**	**0.04**	**0.03**	**0.00**	**0.00**	**158.75**	**0.00**	**0.03**
Delivery Wood Forming Material																																								
Delivery Trucks	Heavy Duty Truck, Diesel	4	30	40	2.554308845	11.0003	0.639724474	0.010712	0.320779	0.011999937	0.130339319	0.295116	0.00299998	0.05585971	1875.156	0.029713727	0.33	0.90	3.88	0.23	0.00	0.16	0.12	0.02	0.00	661.45	0.01	0.12	60	0.03	0.12	0.01	0.00	0.00	0.00	0.00	0.00	19.84	0.00	0.00
Subtotal																		**0.90**	**3.88**	**0.23**	**0.00**	**0.16**	**0.12**	**0.02**	**0.00**	**661.45**	**0.01**	**0.12**		**0.03**	**0.12**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**19.84**	**0.00**	**0.00**
Deliver & Install Rebar Material																																								
Delivery Trucks	Heavy Duty Truck, Diesel	4	30	40	2.554308845	11.0003	0.639724474	0.010712	0.320779	0.011999937	0.130339319	0.295116	0.00299998	0.05585971	1875.156	0.029713727	0.33	0.90	3.88	0.23	0.00	0.16	0.12	0.02	0.00	661.45	0.01	0.12	60	0.03	0.12	0.01	0.00	0.00	0.00	0.00	0.00	19.84	0.00	0.00
Subtotal																		**0.90**	**3.88**	**0.23**	**0.00**	**0.16**	**0.12**	**0.02**	**0.00**	**661.45**	**0.01**	**0.12**		**0.03**	**0.12**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**19.84**	**0.00**	**0.00**
Form Walls																																								
N/A																																								
Subtotal																		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	60	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Pour Concrete																																								
Concrete Trucks	Heavy Duty Truck, Diesel	4	30	40	2.554308845	11.0003	0.639724474	0.010712	0.320779	0.011999937	0.130339319	0.295116	0.00299998	0.05585971	1875.156	0.029713727	0.33	0.90	3.88	0.23	0.00	0.16	0.12	0.02	0.00	661.45	0.01	0.12	60	0.03	0.12	0.01	0.00	0.00	0.00	0.00	0.00	19.84	0.00	0.00
Subtotal																		**0.90**	**3.88**	**0.23**	**0.00**	**0.16**	**0.12**	**0.02**	**0.00**	**661.45**	**0.01**	**0.12**		**0.02703**	**0.11641**	**0.00677**	**0.00011**	**0.00490**	**0.00375**	**0.00047**	**0.00010**	**19.84335**	**0.00031**	**0.00351**
Deliver & Install Trash Screen																																								
Delivery Trucks	Heavy Duty Truck, Diesel	4	30	40	2.554308845	11.0003	0.639724474	0.010712	0.320779	0.011999937	0.130339319	0.295116	0.00299998	0.05585971	1875.156	0.029713727	0.33	0.90	3.88	0.23	0.00	0.16	0.12	0.02	0.00	661.45	0.01	0.12	60	0.03	0.12	0.01	0.00	0.00	0.00	0.00	0.00	19.84	0.00	0.00
Subtotal																		**0.90**	**3.88**	**0.23**	**0.00**	**0.16**	**0.12**	**0.02**	**0.00**	**661.45**	**0.01**	**0.12**		**0.03**	**0.12**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**19.84**	**0.00**	**0.00**
Maximum daily/Total																		**7.21**	**31.04**	**1.81**	**0.03**	**1.31**	**1.00**	**0.13**	**0.03**	**5291.56**	**0.08**	**0.94**		**0.33**	**1.44**	**0.08**	**0.00**	**0.06**	**0.05**	**0.01**	**0.00**	**245.60**	**0.00**	**0.04**
Install RCP Basin Conduits																																								
Deliver RCP & Unload																																								
Delivery Trucks	Heavy Duty Truck, Diesel	8	30	40	2.554308845	11.0003	0.639724474	0.010712	0.320779	0.011999937	0.130339319	0.295116	0.00299998	0.05585971	1875.156	0.029713727	0.33	1.80	7.76	0.45	0.01	0.33	0.25	0.03	0.01	1322.89	0.02	0.23	8	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.00	5.29	0.00	0.00
Subtotal																		**1.80**	**7.76**	**0.45**	**0.01**	**0.33**	**0.25**	**0.03**	**0.01**	**1322.89**	**0.02**	**0.23**		**0.00721**	**0.03104**	**0.00181**	**0.00003**	**0.00131**	**0.00100**	**0.00013**	**0.00003**	**5.29156**	**0.00008**	**0.00094**
Install RCP - Dig, Lay & Backfill																																								
Delivery Trucks	Heavy Duty Truck, Diesel	8	30	40	2.554308845	11.0003	0.639724474	0.010712	0.320779	0.011999937	0.130339319	0.295116	0.00299998	0.05585971	1875.156	0.029713727	0.33	1.80	7.76	0.45	0.01	0.33	0.25	0.03	0.01	1322.89	0.02	0.23	20	0.02	0.08	0.00	0.00	0.00	0.00	0.00	0.00	13.23	0.00	0.00
Subtotal																		**1.80**	**7.76**	**0.45**	**0.01**	**0.33**	**0.25**	**0.03**	**0.01**	**1322.89**	**0.02**	**0.23**		**0.02**	**0.08**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**13.23**	**0.00**	**0.00**
																		1.80	**7.76**	**0.45**	**0.01**	**0.33**	**0.25**	**0.03**	**0.01**	**1322.89**	**0.02**	**0.23**		**0.03**	**0.11**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**18.52**	**0.00**	**0.00**

Table C-6
Fugitive Dust Emission Calculations
Tujunga Spreading Grounds

Activity Assumptions for Fugitive Dust Source

Amount total soil movement	1300000 cubic yards total	
Amount per day	3823.5294 cubic yards/day	
	PM10	PM2.5
Maximum Emission Factor, lbs/cubic yard	0.0045768	0.001438424
Emissions, lbs/day	52.498628	16.49956864
Average Emission Factor, lbs/cubic yard	0.0010405	0.000327026
Emissions, tons/year	2.0290458	0.637700098

Material Loading/Handling (AP-42, p. 13.2.4-3)

$E = (k)(0.0032)[(U/5)^{1.3}]/[(M/2)^{1.4}]$
E = lb/ton
k = Particle Size Constant (0.35 for PM10 and 0.11 for PM2.5)
U = average wind speed = 25 MPH worst day, 8 MPH avg daytime (engineering assumption)
M = moisture content = 10% (mitigated)
Three separate drops are assumed
Assume 1.6 tons/cubic yard

Emission Factors and Emissions
Emission Factors

PM10 Daily	**PM2.5 Daily**
0.00286	0.00090
PM10 Annual Average	**PM2.5 Annual Average**
0.00065	0.00020

A) Dozing (AP-42 Section 11.9 for overburden)

$E = k \times (s)^{1.5} / (M)^{1.4}$ For PM10 and $k \times 5.7 \times (s)^{1.2} / (M)^{1.3}$ for PM2.5
E = lb/hr
k = Scaling Constant (0.75 for PM10 and 0.105 for PM2.5)
s = Silt Content (assumed to be 16% - SCAQMD Handbook for Farm Roads)
M = Moisture Content = 10% (assumes watering when necessary for mitigation)

PM10 Emission Factor
1.910914419 lb/hr

PM2.5 Emission Factor
0.835618668 lb/hr

Maximum Daily Dozer Use

	Hrs/day
	8

Dozer Emissions

	PM10	PM2.5
Lbs/Day	15.29	6.68
Tons/Year	2.38	1.04

Fugitive Dust Grading Emission Total

	Maximum Day	
	PM10 lb/day	PM2.5 lb/day
Dozer	15.29	6.68
Grading	52.50	16.50

Maximum Daily			
	Totals	67.79	23.18
	Ton/year	4.41	1.68

Table C-7
Construction Emission Summary
Tujunga Spreading Grounds

Summary - Maximum Emissions	**Emissions**									**Emission, tons (total)**								
Spreading Basins	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Emissions, lbs/day																		
Heavy Construction Equipment	142.06	520.84	1293.79	1.58	45.93	40.88	157405.64	12.82	122.91	17.56	66.25	160.48	0.19	5.83	5.19	18742.45	1.58	15.25
Worker Vehicles	0.20	6.22	0.59	0.01	0.11	0.05	497.91	0.01	0.02	1.06	0.10	0.03	0.00	0.02	0.01	85	0.00	0.00
Construction Trucks	0.76	3.02	12.63	0.01	0.62	0.44	2203.06	0.04	0.38	0.26	1.05	4.33	0.00	0.22	0.16	764	0.01	0.13
Fugitive Dust					67.79	23.18								4.41	1.68			
Total Daily	**143.02**	**530.07**	**1307.02**	**1.60**	**114.46**	**64.56**	**160106.62**	**12.86**	**123.32**	**18.88**	**67.39**	**164.85**	**0.19**	**10.48**	**7.03**	**19590.83**	**1.60**	**15.38**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*							17773	1.45	13.95
Above Threshold?	Yes	No	Yes	No	No	Yes	N/A	N/A	N/A									

Intakes and Overflow	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Emissions, lbs/day																		
Heavy Construction Equipment	4.45	16.16	41.14	0.06	1.57	1.40	5315.91	0.40	3.91	0.08	0.30	0.68	0.00	0.03	0.03	88.73	0.01	0.07
Worker Vehicles	0.20	6.22	0.59	0.01	0.11	0.05	497.91	0.01	0.02	0.09	0.01	0.00	0.00	0.00	0.00	7	0.00	0.00
Construction Trucks	0.23	0.90	3.88	0.00	0.18	0.13	661.45	0.01	0.12	0.01	0.03	0.12	0.00	0.01	0.00	20	0.00	0.00
Total Daily	**4.88**	**23.28**	**45.62**	**0.07**	**1.86**	**1.57**	**6475.27**	**0.42**	**4.05**	**0.18**	**0.34**	**0.80**	**0.00**	**0.04**	**0.03**	**116.04**	**0.01**	**0.07**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*							105	0.01	0.06
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

RCP Interbasin Conduits	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Emissions, lbs/day																		
Heavy Construction Equipment	6.95	25.94	59.74	0.09	2.44	2.17	8121.79	0.63	5.68	0.06	0.23	0.51	0.00	0.02	0.02	68.97	0.01	0.05
Worker Vehicles	0.20	6.22	0.59	0.01	0.11	0.05	497.91	0.01	0.02	0.06	0.01	0.00	0.00	0.00	0.00	5	0.00	0.00
Construction Trucks	0.45	1.80	7.76	0.01	0.36	0.26	1322.89	0.02	0.23	0.01	0.03	0.11	0.00	0.01	0.00	19	0.00	0.00
Total Daily	**7.61**	**33.96**	**68.09**	**0.10**	**2.91**	**2.48**	**9942.59**	**0.66**	**5.93**	**0.13**	**0.26**	**0.62**	**0.00**	**0.03**	**0.02**	**92.47**	**0.01**	**0.05**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*							84	0.01	0.05
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Total Metric Tons	**17962**	**1.46**	**14.06**	
Total GHG Equivalents	**17962**	**36.54975**	**4191.03**	**22189**

Table C-8
Truck Traffic Breakdown
Tujunga Spreading Grounds

Year	**Heavy Duty Trucks**
Total Trips	174080
TOTAL	**174080**

Table C-9
Diesel Particulate Emission Calculation - Truck Trips
Tujunga Spreading Grounds

Emissions per Source

	HHD	g/s
Segment	**Average Diesel Particulate, total lbs**	**Average Diesel Particulate, g/s**
Each Source	3.816E+00	2.946E-05

Table C-10
Diesel Particulate Emission Factors - 45 mph

Year	**Diesel particulate Emission Factor, grams/mile (HDT) 45mph**
All	0.321

SCAQMD

Rule 403

BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Tables 1, 2 and 3

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	**Control Measure**	**Guidance**
Backfilling	01-1 Stabilize backfill material when not actively handling; and 01-2 Stabilize backfill material during handling; and 01-3 Stabilize soil at completion of activity.	✓ Mix backfill soil with water prior to moving ✓ Dedicate water truck or high capacity hose to backfilling equipment ✓ Empty loader bucket slowly so that no dust plumes are generated ✓ Minimize drop height from loader bucket
Clearing and grubbing	02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and 02-2 Stabilize soil during clearing and grubbing activities; and 02-3 Stabilize soil immediately after clearing and grubbing activities.	✓ Maintain live perennial vegetation where possible ✓ Apply water in sufficient quantity to prevent generation of dust plumes
Clearing forms	03-1 Use water spray to clear forms; or 03-2 Use sweeping and water spray to clear forms; or 03-3 Use vacuum system to clear forms.	✓ Use of high pressure air to clear forms may cause exceedance of Rule requirements
Crushing	04-1 Stabilize surface soils prior to operation of support equipment; and 04-2 Stabilize material after crushing.	✓ Follow permit conditions for crushing equipment ✓ Pre-water material prior to loading into crusher ✓ Monitor crusher emissions opacity ✓ Apply water to crushed material to prevent dust plumes

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Cut and fill	05-1 Pre-water soils prior to cut and fill activities; and 05-2 Stabilize soil during and after cut and fill activities.	✓ For large sites, pre-water with sprinklers or water trucks and allow time for penetration ✓ Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts
Demolition – mechanical/manual	06-1 Stabilize wind erodible surfaces to reduce dust; and 06-2 Stabilize surface soil where support equipment and vehicles will operate; and 06-3 Stabilize loose soil and demolition debris; and 06-4 Comply with AQMD Rule 1403.	✓ Apply water in sufficient quantities to prevent the generation of visible dust plumes
Disturbed soil	07-1 Stabilize disturbed soil throughout the construction site; and 07-2 Stabilize disturbed soil between structures	✓ Limit vehicular traffic and disturbances on soils where possible ✓ If interior block walls are planned, install as early as possible ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes
Earth-moving activities	08-1 Pre-apply water to depth of proposed cuts; and 08-2 Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and 08-3 Stabilize soils once earth-moving activities are complete.	✓ Grade each project phase separately, timed to coincide with construction phase ✓ Upwind fencing can prevent material movement on site ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Importing/exporting of bulk materials	09-1 Stabilize material while loading to reduce fugitive dust emissions; and 09-2 Maintain at least six inches of freeboard on haul vehicles; and 09-3 Stabilize material while transporting to reduce fugitive dust emissions; and 09-4 Stabilize material while unloading to reduce fugitive dust emissions; and 09-5 Comply with Vehicle Code Section 23114.	✓ Use tarps or other suitable enclosures on haul trucks ✓ Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage ✓ Comply with track-out prevention/mitigation requirements ✓ Provide water while loading and unloading to reduce visible dust plumes
Landscaping	10-1 Stabilize soils, materials, slopes	✓ Apply water to materials to stabilize ✓ Maintain materials in a crusted condition ✓ Maintain effective cover over materials ✓ Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes ✓ Hydroseed prior to rain season
Road shoulder maintenance	11-1 Apply water to unpaved shoulders prior to clearing; and 11-2 Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.	✓ Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs ✓ Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	**Control Measure**	**Guidance**
Screening	12-1 Pre-water material prior to screening; and 12-2 Limit fugitive dust emissions to opacity and plume length standards; and 12-3 Stabilize material immediately after screening.	✓ Dedicate water truck or high capacity hose to screening operation ✓ Drop material through the screen slowly and minimize drop height ✓ Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point
Staging areas	13-1 Stabilize staging areas during use; and 13-2 Stabilize staging area soils at project completion.	✓ Limit size of staging area ✓ Limit vehicle speeds to 15 miles per hour ✓ Limit number and size of staging area entrances/exists
Stockpiles/ Bulk Material Handling	14-1 Stabilize stockpiled materials. 14-2 Stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.	✓ Add or remove material from the downwind portion of the storage pile ✓ Maintain storage piles to avoid steep sides or faces

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	**Control Measure**	**Guidance**
Traffic areas for construction activities	15-1 Stabilize all off-road traffic and parking areas; and 15-2 Stabilize all haul routes; and 15-3 Direct construction traffic over established haul routes.	✓ Apply gravel/paving to all haul routes as soon as possible to all future roadway areas ✓ Barriers can be used to ensure vehicles are only used on established parking areas/haul routes
Trenching	16-1 Stabilize surface soils where trencher or excavator and support equipment will operate; and 16-2 Stabilize soils at the completion of trenching activities.	✓ Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches soak soils via the pre-trench and resuming trenching ✓ Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment
Truck loading	17-1 Pre-water material prior to loading; and 17-2 Ensure that freeboard exceeds six inches (CVC 23114)	✓ Empty loader bucket such that no visible dust plumes are created ✓ Ensure that the loader bucket is close to the truck to minimize drop height while loading
Turf Overseeding	18-1 Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and 18-2 Cover haul vehicles prior to exiting the site.	✓ Haul waste material immediately off-site

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Unpaved roads/parking lots	19-1 Stabilize soils to meet the applicable performance standards; and 19-2 Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	✓ Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements
Vacant land	20-1 In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures.	

Table 2
DUST CONTROL MEASURES FOR LARGE OPERATIONS

FUGITIVE DUST SOURCE CATEGORY		**CONTROL ACTIONS**
Earth-moving (except construction cutting and filling areas, and mining operations)	(1a)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR
	(1a-1)	For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.
Earth-moving: Construction fill areas:	(1b)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Executive Officer and the California Air Resources Board and the U.S. EPA, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY		**CONTROL ACTIONS**
Earth-moving: Construction cut areas and mining operations:	(1c)	Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.
Disturbed surface areas (except completed grading areas)	(2a/b)	Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area.
Disturbed surface areas: Completed grading areas	(2c)	Apply chemical stabilizers within five working days of grading completion; OR
	(2d)	Take actions (3a) or (3c) specified for inactive disturbed surface areas.
Inactive disturbed surface areas	(3a)	Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; OR
	(3b)	Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR
	(3c)	Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR
	(3d)	Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS
Unpaved Roads	(4a) Water all roads used for any vehicular traffic at least once per every two hours of active operations [3 times per normal 8 hour work day]; OR (4b) Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR (4c) Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.
Open storage piles	(5a) Apply chemical stabilizers; OR (5b) Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR (5c) Install temporary coverings; OR (5d) Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile. This option may only be used at aggregate-related plants or at cement manufacturing facilities.
All Categories	(6a) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 2 may be used.

TABLE 3
CONTINGENCY CONTROL MEASURES FOR LARGE OPERATIONS

FUGITIVE DUST SOURCE CATEGORY		CONTROL MEASURES
Earth-moving	(1A)	Cease all active operations; OR
	(2A)	Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	(0B)	On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR
	(1B)	Apply chemical stabilizers prior to wind event; OR
	(2B)	Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR
	(3B)	Take the actions specified in Table 2, Item (3c); OR
	(4B)	Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	(1C)	Apply chemical stabilizers prior to wind event; OR
	(2C)	Apply water twice per hour during active operation; OR
	(3C)	Stop all vehicular traffic.
Open storage piles	(1D)	Apply water twice per hour; OR
	(2D)	Install temporary coverings.
Paved road track-out	(1E)	Cover all haul vehicles; OR
	(2E)	Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
All Categories	(1F)	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used.

APPENDIX D

Noise Impact Analysis

VSA
n
Associates

Acoustics
Noise
Vibration
Consultants

Tujunga Spreading Grounds Enhancement Project

Noise Impact Analysis

Prepared For
MWH Americas, Inc.

Prepared By
VSA n Associates

April 5, 2012

12525 Lambert Road, Whittier, CA 90606 Phone (562) 698-2468 Fax (562) 698-2339

Tujunga Spreading Grounds
Enhancement Project

Noise Impact Analysis

Table of Content

1. Introduction 1
    - 1.1 Project Background 1
    - 1.2 Project Objectives 1
    - 1.3 Project Location 1
    - 1.4 Project Description 1
    - 1.5 Noise Terminology 6
    - 1.6 Noise Definition 6
    - 1.7 Subjective Response to Noise 8
    - 1.8 Groundborne Vibration/Noise Definition 8
2. Regulatory Framework 9
    - 2.1 Introduction 9
    - 2.2 Impact Basis 9
3. Existing Conditions 11
4. Impact Analysis 15
    - 4.1 Introduction 15
    - 4.2 Question 1: Generation of Noise levels in Excess of Standards 15
    - 4.3 Question 2: Generation of Excessive Groundborne Vibration/Noise Levels 15
    - 4.4 Question 3: Substantial Permanent Increase in Ambient Noise Levels 16
    - 4.5 Question 4: Substantial Temporary Increase in Ambient Noise Levels 16
    - 4.6 Question 5: Project Located within an Airport Land Use Plan 17
    - 4.7 Question 6: Project Located within Vicinity of Private Air Strip 17
5. Mitigation Measures 18
6. Level of Significance 19

1. INTRODUCTION

1.1 Project Background

The Tujunga Spreading Grounds (TSG) are owned by the Los Angeles Department of Water and Power (LADWP) and have been operated by the Los Angeles County Flood Control District (District) since 1990. The District operates TSG by diverting stormwater from the Tujunga Wash Channel using a rubber dam and distributing it through the facility using a canal system and flashboard structures. TSG consists of shallow basins and associated facilities, and covers approximately 160 acres. Three of the basins, covering approximately 8 acres, are presently not in use. The maximum intake of stormwater at TSG is 250 cubic feet per second (cfs) and the approximate percolation rate is 140 cfs. The total storage volume within the facility is approximately 100 acre-feet.

TSG is located adjacent to the unlined Sheldon-Arleta Landfill. In the past, when TSG recharged large amounts of water, methane gas migrated from the landfill to local residential properties. This issue caused temporary restrictions to be placed on the stormwater facility by the City of Los Angeles Bureau of Sanitation (LABOS). Those restrictions limited the maximum intake flowrate to 50 cfs and removed several basins from service. Those restrictions were intended to prevent methane gas migration into nearby schools and communities during stormwater spreading operations. Phase I of the Cesar Chavez Project (completed in 2010) upgraded the landfill’s methane gas extraction system and mitigated this issue, allowing for full operation of the spreading facilities.

1.2 Project Objectives

The objective of the Tujunga Spreading Grounds Enhancement Project (project) is to increase stormwater recharge into the San Fernando Groundwater Basin through enhancement and operation of the TSG facility. Due to increasing need for local water supplies in the Los Angeles area and subsequent demand on groundwater supplies, enhancement of the TSG facility will enable capture of a larger volume of stormwater than is currently possible.

1.3 Project Location

The TSG facility is located at latitude 34° 13' 39" N and longitude -118° 24' 54" W, adjacent to the Sheldon-Arleta Landfill in the City of Los Angeles, Los Angeles County. The TSG is located approximately 17 miles northwest of downtown Los Angeles in the northeastern portion of the San Fernando Valley at the intersection of Roscoe Boulevard and Sheldon Street. The proposed project enhancements will be within the boundary of the existing 160-acre facility. The regional location of the project is shown on Figure 1.1. The current spreading grounds configuration is shown on Figure 1.2 and the proposed configuration is shown on Figure 1.3.

1.4 Project Description

The proposed enhancement project for TSG will alter the current intake facility to capture low flows; create a treatment area for the low flows; install two new intake facilities to capture high flows from the Tujunga Wash and Pacoima Wash Diversion Channels; install devices to prevent widespread distribution of trash within the TSG; reactivate, deepen and/or combine basins to increase the facility’s storage and recharge capacity; install new inter-basin flow controls; and install telemetry on all diversion facilities. Figure 1.3 shows proposed facilities. Modeling conducted by LADWP indicates that an average of 7,980 acre-feet per year will be captured and recharged with the enhanced facility.

The operation of the existing intake structure will be altered to allow only low flow through the intake and a trash rack will be installed. Immediately northeast of the I-5 / SR-170 interchange, an underground pipe conveys diverted stormwater to the spreading basins. Under the proposed project, this area will be improved to provide treatment prior to recharging the groundwater. Treated stormwater will pass under I-5 using the existing conveyance pipe and will be released into the reactivated basins located southeast of the freeway interchange. Water treatment will include attenuation to allow for settling of larger solids.

Two new intake structures will be built to take high flows from both the Tujunga and Pacoima Wash watersheds. The first new intake facility (high flow intake) will be located immediately southwest of the freeway interchange and will divert 250 cfs into the upper portion of the TSG. The second new intake facility will be located immediately downstream of the confluence of the Tujunga Wash and Pacoima Wash Diversion Channels and will divert a maximum of 200 cfs into the lower portion of the TSG from either channel.

The existing TSG Basins A through N and Q through T shown on Figure 1.2 will be graded to accept water from either intake system. The basins will be interconnected using weir spillways and bypass gates. Basin A, the southernmost basin, will act as an overflow, or bypass basin, and will have a small sump pump to drain the basins, if necessary. In addition, Basin A will be expanded to the northwest to increase recharge and storage capacity and allow for a new emergency overflow facility to link with the existing overflow facility.

Basins O and P, which are the dormant, uppermost basins, located between I-5 and SR-170, will be reactivated, deepened, and able to accept low flows throughout the dry season, and may be able to accept flows during the wet season, depending on operational limitations. All basins west of SR-170 (Basins A through N and Q through T) will be deepened, and some combined, increasing storage and recharge capacity.

Inter-basin flashboard structures (which connect and allow water to flow between basins) will be replaced with modernized weir structures. All new diversion facilities will be automated; operation will be managed remotely from LADWP’s on-site facility. Maintenance activities will include periodic vegetation removal and sediment removal from the basins.

Document: TujungaLocation2.mxd

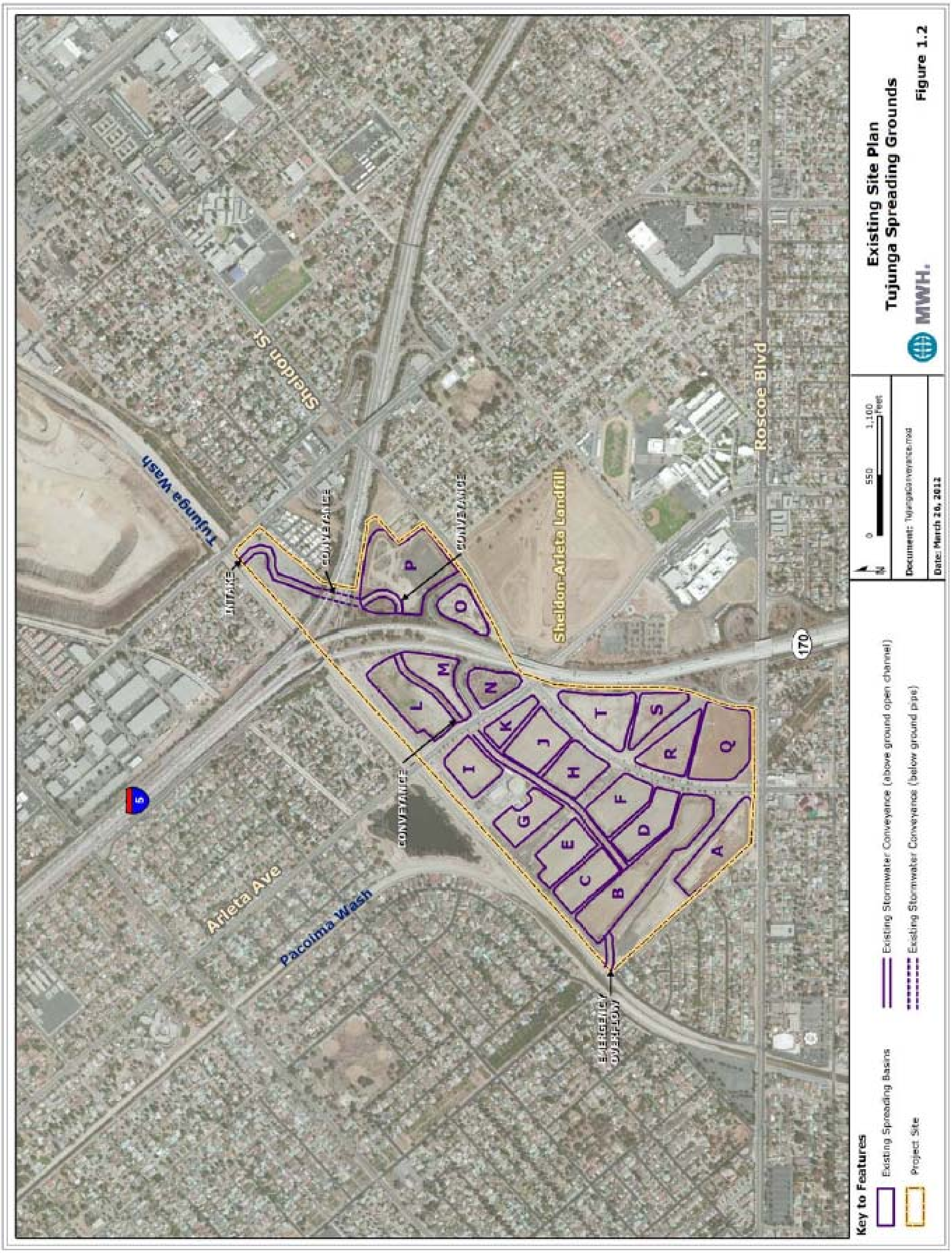
Date: March 26, 2013

Source: USGS, CaSil

Tujunga Spreading Grounds Enhancement Project

MWH.

Figure 1.1



Existing Site Plan
Tujunga Spreading Grounds

Figure 1.2

Proposed Site Plan
Tujunga Spreading Grounds

Figure 1.3

1.5 Noise Terminology

The following is a brief discussion of noise terminology used in this assessment.

- *Sound:* A vibratory disturbance created by a vibrating objects, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.

- *Noise:* Sound that is loud, unpleasant, unexpected, or otherwise undesirable.

- *Decibel (dB):* A unit less measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals.

- *A-Weighted Decibel (dBA):* Overall frequency-weighted sound level in decibels which approximates the frequency response of the human ear.

- *Equivalent Sound Level (Leq)*: The equivalent steady state sound or vibration level, which in a stated period of time would contain the same acoustical or vibration energy.

- *Ambient:* The total of all noise in the environment, other than the noise from the source of interest. This term is used interchangeably with background noise.

- *Frequency:* The number of times per second that the sine wave of sound repeats itself, or that the sine waves of a vibrating object repeats itself. Expressed in hertz (Hz).

- *Absorption:* A property of materials that allows a reduction in the amount of sound energy reflected. The introduction of an absorbent into the surfaces of a room will reduce the sound pressure level in that room by not reflecting all of the sound energy striking the room's surfaces. The effect of absorption merely reduces the resultant sound level in the room produced by energy that has already entered the room.

- *Vibration:* An oscillatory motion of solid bodies described by displacement, velocity, or acceleration with respect to a given reference point.

1.6 Noise Definition

Noise is defined as unwanted sound. The method commonly used to quantify environmental noise involves evaluation of all frequencies of sound, with an adjustment to reflect the fact that human hearing is less sensitive to low and high frequencies than to midrange frequencies. This measurement adjustment is called “A-weighting.” A noise level so measured is called the A-weighted sound level measured in A-weighted decibels (dBA). In practice, environmental noise is conveniently measured using a sound level meter that includes an electronic filter corresponding to the A-weighted curve. Table 1.1 provides examples of typical A-weighted noise levels, their subjective loudness and effects.

Common Noise Source	A-Weighted Sound Level dBA	Subjective Loudness	Effects of Noise
Threshold of Pain	140	**Intolerable or Deafening**	**Hearing Loss**
Near jet engine	130		
Hard rock band	120		
Automatic punch press	110		
Loud auto horn	100	**Very Noisy**	
Power mower	90		
Garbage Disposal	80		**Speech Interference**
Commercial jet interior during flight	70	**Loud**	
Normal conversation at 5 – 10 feet	60		
Residential Air Conditioner at 50 feet	50	**Moderate**	
Background Level within Residence			**Sleep Disturbance**
Bird Calls	40		
Whisper	30	**Faint**	**No Effect**
Interior of Recording Studio	20		
Rustling Leaves	10	**Very Faint**	
Threshold of Hearing	0		

Table 1.1 : Common Noise Levels, Loudness and Effects

To account for the fluctuation in noise levels over time, noise impacts are commonly evaluated using time-averaged noise levels. Time averages are typically expressed in terms of the Equivalent Level (Leq), a steady-state energy level equal to the energy content of the time varying period. Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, an artificial decibel increment is added to quiet time noise levels in the 24 hour noise descriptors called the Community Noise Equivalent Level (CNEL) or the Day-Night Level (Ldn). Another measure used to characterize noise exposure is the variation in sound levels over time, percentage exceedance level.

The human response to environmental noise is subjective and varies considerably from individual to individual. The effects of noise can range from interference with sleep, concentration, and communication, to the causation of physiological and psychological stress, and, at the highest intensity levels, hearing loss.

Noise is attenuated as it propagates from the source to the receiver. Attenuation is logarithmic, rather than linear, so that for instance, a doubling of traffic volumes will result in a 3-dBA increase in traffic-dominated noise environments. For line sources, such as streets, noise levels decrease by 3 to 5 dBA for every doubling of distance from the source. For point sources, noise levels decrease quicker, about 6 dBA, for every doubling of distance from the source. Topography and the type of surface (paved or vegetated) also influence noise attenuation characteristics.

1.7 Subjective Response to Noise

One way of estimating a person's subjective reaction to a new noise is to compare the new noise with the existing noise environment to which the person has become adapted; i.e., the increase over the so-called “ambient” noise level. Research in the area of perceived impacts of various degrees of increase in A-weighted noise levels, indicates the following:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived.
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference.
- A change in noise level of at least 5 dBA is required before any noticeable change in community response would be expected. A 5-dBA increase is often considered a significant impact.
- A 10-dBA increase is subjectively heard as approximately a doubling in loudness and almost always causes an adverse community response.

In assessing the impact of noise upon the environment, the nature and level of activities that generate the noise, the pathway through which the noise travels, the sensitivity of the receptor, the period of exposure and the increase over the ambient noise levels are all considered.

1.8 Groundborne Vibration/Noise Definition

Vibration is an oscillatory motion, which can be described in terms of displacement, velocity or acceleration. Because motion is oscillatory, there is no net movement of the vibrating element and the average of any of the motion descriptors is zero. Displacement is the easiest descriptor to understand. For a vibrating floor, the displacement is simply the distance that a point on the floor moves away from its static position. The velocity represents the instantaneous speed of the movement and the acceleration the rate of change of speed.

Although displacement is easier to understand than velocity and acceleration, it is rarely used for describing groundborne vibration. This is because most transducers used for groundborne vibration use either velocity or acceleration, and even more important, the response of humans, buildings and equipment to vibration is more accurately described using velocity or acceleration.

The effects of groundborne vibration include fellable movements of the building floors, rattling of windows, shaking of items on shelves or hangings on walls. The rumble is the noise radiated from the motion of the room surfaces. In essence the room surfaces act like a loudspeaker. This is called groundborne noise. In extreme cases vibrations can cause damage to buildings.

Groundborne vibration is almost never annoying to people who are outdoors, although the motion of the ground may be perceived. Without the effects associated with the shaking of the building, the motion does not provoke the same adverse human reaction. Additionally the rumbling noise that usually accompanies the building vibration can only occur inside buildings.

2. REGULATORY FRAMEWORK

2.1 Introduction

Evaluation of noise impacts includes consideration of:
- The impact of Construction Noise/Vibration
- The Impact of Operational Noise/Vibration.

The State CEQA Guidelines recommend the consideration of six questions when addressing the potential for significant Noise impacts. In order to answer the six questions we need to know what the project regulatory requirements are. The six questions are:
1. Would the project result in 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?
2. Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?
3. Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
4. Would .the project result in substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?
5. 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?
6. 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?

The project is located in the city of Los Angeles and is subject to the regulatory authority of the City of Los Angeles. Therefore, for the purposes of this study noise impacts will be assessed on the basis of the City of Los Angeles, Noise Regulations.

2.2 Impact Basis

- **Construction Noise:**

  Per City of Los Angeles Municipal Code (LAMC) Section 41.40, Construction noise constitutes a violation if construction, repair, or excavation work is performed with any construction type device, or job-site delivering of construction materials without a Police Commission permit:
  - Between the hours of 9:00 p.m. and 7:00 a.m.
  - In any residential zone, or within 500 feet of land so occupied, before 8:00 a.m. or after 6:00 p.m. on any Saturday or national holidays, nor at any time on any Sunday

  Per City of Los Angeles Municipal Code (LAMC) Section 112.05 Between the hours of 7:00 a.m. and 10:00 p.m., in any residential zone of the City or within 500 feet thereof, no person shall operate or cause to be operated any powered equipment or powered hand tool that produces a maximum noise level exceeding the following noise limits at a distance of 50 feet there from:

  a. 75dB(A) for construction, industrial, and agricultural machinery including crawler-tractors, dozers, rotary drills and augers, loaders, power shovels, cranes, derricks, motor graders, paving machines, off-highway trucks, ditchers, trenchers, compactors, scrapers, wagons, pavement breakers, compressors and pneumatic or other powered equipment;

b. 75dB(A) for powered equipment of 20 HP or less intended for infrequent use in residential areas, including chain saws, log chippers and powered hand tools;

c. 65dB(A) for powered equipment intended for repetitive use in residential areas, including lawn mowers, backpack blowers, small lawn and garden tools and riding tractors;

The noise limits for particular equipment listed above in a, b and c shall be deemed to be superseded and replaced by noise limits for such equipment from and after their establishment by final regulations adopted by the Federal Environmental Protection Agency and published in the Federal Register.

Said noise limitations shall not apply where compliance therewith is technically infeasible. The burden of proving that compliance is technically infeasible shall be upon the person or persons charged with a violation of this section. Technical infeasibility shall mean that said noise limitations cannot be complied with despite the use of mufflers, shields, sound barriers and/or other noise reduction device or techniques during the operation of the equipment.

- **Operational Noise**
  - **Equipment Noise (SEC. 112.02):**
    (a) It shall be unlawful for any person, within any zone of the city to operate any air conditioning, refrigeration or heating equipment for any residence or other structure or to operate any pumping, filtering or heating equipment for any pool or reservoir in such manner as to create any noise which would cause the noise level on the premises of any other occupied property or if a condominium, apartment house, duplex, or attached business, within any adjoining unit-to exceed the ambient noise level by more than five (5) decibels. Presumed ambient levels have been established. If measured ambient noise levels are below the presumed ambient noise levels then the presumed ambient noise levels are considered the ambient levels and are used in the analysis. If the measured ambient levels are higher than the presumed ambient then the measured noise levels are used in the analysis. Presumed ambient noise levels are presented in Table 2.2.

Table 2.2: Presumed Ambient Noise Levels (dBA),
Source: LAMC, Section 111.03.

Zone		Day	Night
Residential	A1, A2, RA, RE, RS, RD, RW1, RW2, R1, R2, R3, R4, R5	50	40
Commercial	P, PB, CR, C1, C1.5, C2, C4, C5, CM	60	55
Manufacturing	M1, MR1, MR2	60	55
Heavy Manufacturing	M2, M3	65	65

  - **Traffic Noise:**

    The City of Los Angeles has not adopted any standards for traffic noise.

- **Vibration**

The City of Los Angeles has not adopted any standards for groundborne vibration associated with construction activities or operational activities.

3. EXISTING CONDITIONS

The existing noise environment in the vicinity of the project site is typical of urban areas characterized by noise levels generated by vehicular traffic on nearby streets and Highways and occasional aircraft, dogs barking, lawn mowers, etc. To characterize the existing noise environment at the proposed project site, ambient noise measurements were made on February 26, 2012. Figure 3.1 shows an aerial of the project site along with the measurement locations.

Measurement Location Number	Description of Measurement Location
1	North Corner of Tonopah St. and Canterbury Ave.
2	Tonopah St, Past Roslyndale Avenue, 5th House
3	Side Middle of Reservoir
4	North Corner Tonopah St. and Lev Avenue
5	South Corner Tonopah St. and Vena Avenue
6	North Corner Tonopah St. and Morehart Avenue
7	N Corner Sheldon St and Cranford Avenue
8	8846 Cranford Avenue
9	End of Cul-de-sac – Teesdale Avenue
10	End of Cul-de-sac – Morse Avenue
11	North Corner Millrace St. and Canterbury Ave

Figure 3.1: Site Aerial and Location of Noise Measurements

Table 3.1 and 3.2 presents the measured existing noise levels measured on February 26 and April 3, 2012. Figure 3.2 presents the comparison of measured noise levels made on February 26 and April 3. The area around the project is residential. The measured ambient levels around the project are equal to above the presumed ambient (50 dBA for Residential). Therefore analysis of noise levels will be based on measured ambient noise levels. The measured noise levels are presented in terms of 1 minute and 20 minute Leq to show that noise levels are not constant over time.

- 1 minute Leq represents the equivalent level over a 1 minute period.
- 20 minute Leq represents the equivalent level over a 20 minute period.

Location	1	2	3	4	5	6	7	8	9	10	11
Approximate Measurement Time	11:08 To 11:28	11:35 To 11:55	12:22 To 12:42	16:52 To 17:12	17:20 To 17:40	13:03 To 13:23	13:46 To 14:06	14:20 To 14:40	15:15 To 15:35	15:45 To 16:05	16:17 To 16:37
1 Minute Leq over the 20 Minute Period	59	51	54	59	56	61	71	59	59	53	50
	56	49	56	58	56	60	69	66	62	59	47
	53	52	54	64	55	63	70	53	59	57	46
	49	47	54	63	58	60	68	56	59	52	46
	44	47	53	61	56	60	71	50	59	53	46
	44	46	53	65	56	60	68	50	63	56	51
	54	46	53	54	55	61	66	51	59	59	49
	52	51	54	54	56	60	70	51	59	58	49
	48	48	54	54	55	60	70	57	59	55	53
	45	59	57	62	55	61	70	50	59	52	50
	53	49	57	63	56	61	71	48	58	53	48
	47	50	54	58	55	61	69	50	60	57	53
	55	49	53	64	55	61	67	65	59	64	52
	46	49	54	56	55	61	68	62	60	60	49
	47	48	54	62	55	61	66	62	60	57	50
	45	52	55	54	55	62	73	53	59	56	51
	48	50	56	56	56	61	67	50	59	55	51
	57	49	54	56	56	62	65	53	59	56	51
	46	49	54	59	55	60	66	60	60	55	48
	48	50	55	60	55	60	70	55	60	57	47
20 Minute LEQ	52	51	54	60	56	61	69	59	60	57	50

Table 3.1: Measured (February 26, 2012) 1 Minute and 20 Minute Leq

Location	1	2	3	4	5	6	7	8	9	10	11
Approximate Measurement Time	11:06 To 11:26	11:32 To 11:52	12:08 To 12:28	12:38 To 12:58	13:04 To 13:24	13:35 To 13:55	14:16 To 14:36	14:41 To 15:01	15:11 To 15:31	15:39 To 15:59	16:07 To 16:27
1 Minute Leq over the 20 Minute Period	57	55	56	58	58	61	73	52	59	55	55
	54	49	53	64	56	61	71	57	59	54	54
	54	51	52	63	55	61	75	55	61	55	49
	53	48	53	64	55	62	73	61	59	55	53
	77	52	53	56	55	62	71	54	57	55	51
	58	49	53	54	56	62	73	52	59	53	52
	57	53	53	68	55	61	76	51	57	54	51
	53	49	59	55	56	61	72	53	61	55	50
	50	50	55	55	55	61	69	54	58	54	48
	49	53	52	57	50	62	71	50	60	54	50
	47	57	54	54	50	61	70	50	59	56	49
	46	58	51	58	58	61	71	57	59	52	49
	47	49	51	62	59	62	72	54	57	54	47
	49	51	53	59	51	61	72	51	71	54	49
	63	46	52	55	51	61	71	57	59	53	49
	50	57	54	60	51	61	73	59	58	54	58
	54	55	56	54	55	61	71	50	60	56	48
	50	55	51	60	56	63	74	51	59	54	48
	61	44	51	55	63	62	76	52	59	54	47
	53	53	51	65	62	62	73	51	59	56	56
20 Minute LEQ	64	53	54	61	57	61	73	55	62	54	52

Table 3.2: Measured (April 3, 2012) 1 Minute and 20 Minute Leq

9	Represents the Measurement Location (Figure 3.1)
60/62	The first number represents the measured noise level (20 Minute Leq) on February 6th and the second on April 3.

Figure 3.2: Comparison of Measured Noise Levels at Different Locations

4. IMPACT ANALYSIS

4.1 Introduction

The State CEQA Guidelines recommend the consideration of six questions when addressing the potential for significant noise impacts. These six questions are discussed in the following sections.

4.2 Question 1: Generation of Noise levels in Excess of Standards

Question 1: 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?

Answer to Question 1: The proposed project will not generate noise levels in excess of established standards. Discussion of findings:

- Construction Noise: Construction noise standards are presented in section 2.2. Per this section:
  - Construction is permissible between 7:00 AM and 9:00 PM, Monday through Friday
  - Construction is permissible between 8:00 AM and 6:00 PM, on Saturday
  - Construction is not permissible on Sundays and Holidays.

  Construction would be scheduled in compliance with the times indicated above. The plans and specifications for the proposed project would include a requirement for the construction contractor(s) to comply with all provisions of City of Los Angeles Regulations 41.40 LAMC Construction Noise Standard.

- Operations Noise Level: Under the project, a small sump pump will be installed in the Bypass Basin and two electric-powered pumps will power the rubber dams to direct flows in Tujunga and Pacoima Washes. This equipment will operate infrequently, and is similar to existing equipment currently used at the TSG. Since addition of this equipment will result in a noise increase of less than 1 dBA, operation of the project will be in compliance with applicable City of Los Angeles Noise standards.

- Project Traffic Generated Noise: Based on the Traffic Impact Analysis for the Tujunga Spreading Grounds Enhancement Project (Fehr Peers, 2011), the increase in the traffic over current traffic is less than 1%. A 1% increase will result in noise level increase of less than 1 dB. An increase of less than 1 dB will not be perceived, as discussed in Section 1.7. Therefore, the noise impacts from project related traffic are less than significant.

- Summary: The cumulative impact of Operations noise and Traffic noise is predicted to be less than 1 dB. Therefore, the project will not generate noise in excess of standards established in the noise ordinance.

4.3 Question 2: Generation of Excessive Groundborne Vibration/Noise Levels

Question 2: Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Answer to Question 2: The proposed project will not generate excessive groundborne vibration or groundborne noise. Discussion of findings:

- Construction Activities: There are no requirements for construction generated groundborne vibration or groundborne noise. Therefore the construction of the proposed project is expected to result in no impact to groundborne vibration or groundborne noise in excess of established standards.

- Operational Activities: Operation of the project requires periodic vegetation and basin maintenance. The vibration from the type of equipment to be used will not be perceptible at the nearest residences. Therefore, project operation will not generate excessive groundborne vibration or groundborne noise.
- Summary: In summary, impacts from groundborne vibration or groundborne noise will be less than significant.

4.4 Question 3: Substantial Permanent Increase in Ambient Noise Levels

Question 3: Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Answer to Question 3: Permanent noise increases associated with project operation will be less than significant. Discussion of findings:

- Noise generated during project operations will result from sump pump operation, pumps used to position the rubber dams, and periodic maintenance vehicles and equipment.
- Based on the City of Los Angeles Equipment Noise standard (LAMC Section 112.02), a noise increase related to pumping equipment of 5 dB is a significant impact.
- Project Operations: Under the project, a small sump pump will be installed in the Bypass Basin and two electric-powered pumps will power the rubber dams to direct flows in Tujunga and Pacoima Washes. This equipment will operate infrequently, and is similar to existing equipment currently used at the TSG. Since addition of this equipment will result in a noise increase of less than 1 dBA, the impact on noise during project operation will be less than significant.
- Traffic Noise: Operation of the project will require periodic vegetation and basin maintenance; the resulting traffic will be the same as under existing conditions. Therefore, there will be no permanent noise increases related to traffic for project operation.

4.5 Question 4: Substantial Temporary Increase in Ambient Noise Levels

Question 4: Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Answer to Question 4: Project construction will temporarily increase ambient noise levels in excess of established thresholds. The impact would be temporary but significant. Mitigation measures have been identified to reduce construction noise impacts to a less than significant level. Discussion of our findings:

- Significance is usually defined as an increase in the noise level of 5 dB or more.
- General Comments:
    - o The ambient noise levels at the receiver sites vary from 50 to 69 dBA (20 minute Leq) depending on the location, Figure 3.2. Therefore the amount of mitigation required at any given receiver will vary.
    - o The nearest noise receiver to construction activity is located approximately 50 feet.
    - o Mitigation requirements will vary depending on the receiver and the construction activity location. The amount of mitigation required will vary from location to location and will range from 0 to 23 dB, assuming activity noise levels are as indicated in Table 4.1.
- Construction noise will result in an increase in ambient noise levels in excess of 5 dBA on adjacent residential receptors. Therefore, the noise impact during project construction is

significant and mitigation measures are required. If mitigation measures are used the noise impact can be reduced to a level that results in impact that is less than significant.

Construction Phase	Noise Level (dBA Leq)	
	50 Feet	Noise Levels at 50 feet with Mufflers
Ground Clearing	84	82
Excavation, Grading	89	86
Foundations	78	77
Structural	85	83
Finishing	89	86

Table 4.1: Outdoor Construction Noise Levels
Source: EPA, Noise from Construction Equipment and Operations, Building Equipment and Home Appliances, PB206717, 1971

4.6 Question 5: Project Located within an Airport Land Use Plan

Question 5: 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?

Answer to Question 5: The proposed project is expected to have no Noise impact in relation to public airports. Discussion of findings:

The nearest public airport/public use airport is the Bob Hope Airport (BUR) in Burbank located approximately 3.3 miles to the South/East. The project site is well outside the 65 CNEL contour boundaries. Therefore, there are no expected noise impacts on people working in the project area to noise related to public airports.

4.7 Question 6: Project Located within Vicinity of Private Air Strip

Question 6: 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?

Answer to Question 6: The proposed project is expected to have no Noise impacts in relation to private airstrips. Discussion of findings:

The nearest private air strip is the Whiteman Airport located 1.2 miles to the North. Based on the frequency of flights and the type of aircraft, there are no expected Noise impacts on people working in the project area related to private airstrips.

5. MITIGATION MEASURES

- Construction shall be limited to:
  - Weekdays: 7:00 AM to 9:00 PM
  - Saturdays: 8:00 AM to 6:00 PM
- No construction shall occur on Sundays or national holidays.
- Mitigation is required during all phases of the project. Mitigation will vary from construction location to construction location and from receiver location to receiver location. Prior to start of construction the contractor shall develop noise control plan based on :
  - Actual equipment to be used. If actual equipment noise levels are not available these shall be measured in the field
  - Location of construction activities
  - Location of receiver

  The plan should predict the noise levels with the actual equipment and with different mitigation elements. Recommended mitigation measures and expected noise reduction:

Mitigation Measure	Expected Noise Reduction
Specialized Mufflers: Based on the equipment work with equipment manufacturer to install mufflers with greater noise reduction.	3 to 6 dB
Directional Exhaust Pipe: Typically exhaust pipes point upwards. Add an extension to the exhaust pipe that can change the direction in which the exhaust pipe points. Point away from sensitive receiver.	3 to 6 dB
Damping and Sound Absorptive Material: Apply acoustical damping and protected internal noise absorption layers to vibrating panels and covers.	5 dB
Barrier near Source or Receiver	10 to 12 dB
Total Noise reduction	21 to 29

Table 5.1: Mitigation Measures and Potential Noise reduction

- To ensure the noise levels are below the design limits, noise levels should be monitored during the course of the construction period. If noise levels exceed the design limit noise levels, the noise control plan shall be revised. Noise monitoring:
  - Shall be a minimum of 1 day a week when the construction is within 400 feet from nearest residence.
  - Shall be continuous when the predicted noise plan levels are within 3 dB of the maximum permitted noise levels, regardless of the location of the construction.
  - Shall include 1, 10, 15, 20 minute Leq levels. The 10, 15, 20 minute Leq can be calculated from the 1 minute measured Leq.
- Section 2.2 indicates the maximum permitted powered equipment or powered hand tool noise levels. Determine noise levels of all actual equipment to be used, If actual equipment noise levels are not available these shall be measured in the field. If noise levels exceed the noise levels indicated then noise control shall be incorporated to reduce the noise levels. Noise control techniques shall be those indicated in Table 5.1. If the indicated noise control techniques or other manufacturer recommended techniques do not reduce the noise levels to limits specified then control shall be considered technically infeasible and the said noise limitations shall not apply.

6. LEVEL OF SIGNIFICANCE

CEQA Noise Impact Question	No Impact	Less Than Significant	Less Than Significant with Mitigation	Potentially Significant
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?		X		
Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?		X		
A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?		X		
A substantial temporary or periodic increase in ambient noise levels in the project vicinity about levels existing without the project?			X	
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?	X			
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?	X			

APPENDIX E

Traffic Impact Analysis

TRAFFIC IMPACT ANALYSIS
FOR THE
TUJUNGA SPREADING GROUNDS
ENHANCEMENT PROJECT

MARCH 2012

PREPARED FOR

MWH AMERICAS, INC.

PREPARED BY

FEHR PEERS

TRAFFIC IMPACT ANALYSIS FOR THE TUJUNGA SPREADING GROUNDS ENHANCEMENT PROJECT

March 2012

Prepared for:

MWH Americas, Inc.

Prepared by:

FEHR & PEERS
201 Santa Monica Boulevard, Suite 500
Santa Monica, California 90401
(310) 458-9916

Ref: 2393

TABLE OF CONTENTS

1. Introduction 1
Project Description 1
Study Scope 3
Organization of Report 4

2. Existing Conditions 5
Existing Street System 5
Existing Transit Service 7
Existing BIcycle Facilities 8
Existing Traffic Volumes and Levels of Service 8
Existing Traffic Volumes 8
Level of Service Methodology 8
Existing Intersection Levels of Service 9

3. Future Traffic Projections 14
Project Traffic Projections 14
Project Alternatives 14
Project Traffic Generation 21
Project Traffic Distribution 21
Project Traffic Assignment 21
Existing Plus Project Traffic Projections 24
Cumulative Base (Year 2015) Traffic Projections 24
Areawide Traffic Growth 24
Traffic Generation of Related Projects 24
Cumulative Development Project Traffic Distribution 24
Cumulative Base Traffic Volumes 24
Cumulative plus Project (Year 2015) Traffic Projections 25

4. Traffic Impact Analysis 28
Criteria for Determination of Temporary Adverse Traffic Impacts 28
Existing plus Project Operating Conditions 29
Alternative 1 – Boulevard Pit 29
Alternative 2 – Sheldon Pit 29
Alternative 3 – CAL-MAT 29
Alternative 4 – Bradley Landfill 30
Cumulative Base (Year 2015) Operating Conditions 30
Cumulative plus Project (Year 2015) Traffic Operating Conditions 36
Alternative 1 – Boulevard Pit 36
Alternative 2 – Sheldon Pit 36
Alternative 3 – CAL-MAT 36
Alternative 4 – Bradley Landfill 37
Mitigation Measures 42

5. Regional Transportation System Analysis 45
CMP Traffic Impact Analysis 45
CMP Transit Impact Analysis 45

6. Summary and Conclusions 46

APPENDICES

Appendix A: Intersection Lane Configurations

Appendix B: Traffic Count Sheets

Appendix C: Estimated Traffic Volumes

Appendix D: Intersection Level of Service Worksheets

LIST OF FIGURES

Figure 1 – Study Area and Analyzed Intersections..2
Figure 2 – Existing (2011) Peak Hour Traffic Volumes with PCE..10
Figure 3 – Project Site and Access Points..16
Figure 4 – Alternative 1: Boulevard Pit Recommended Truck Routing Plan..17
Figure 5 – Alternative 2: Sheldon Pit Recommended Truck Routing Plan..18
Figure 6 – Alternative 3: CAL-MAT Recommended Truck Routing Plan...19
Figure 7 – Alternative 4: Bradley Landfill Recommended Truck Routing Plan.......................................20
Figure 8 – Worker Distribution..23
Figure 9 – Related Projects..27

LIST OF TABLES

Table 1 - Existing (2011) Surface Street Characteristics 6

Table 2 - Level of Service Definitions for Signalized Intersections 12

Table 3 - Existing (2011) Intersection Level of Service with PCE 13

Table 4 – Estimated Project Trip Generation 22

Table 5 - Related ProjectS Trip Generation 26

Table 6 - Existing (2011) Plus Project Intersection Level of Service With PCE: Alternatvie 1 31

Table 7 - Existing (2011) Plus Project Intersection Level of Service With PCE: Alternatvie 2 32

Table 8 - Existing (2011) Plus Project Intersection Level of Service With PCE: Alternatvie 3 33

Table 9 - Existing (2011) Plus Project Intersection Level of Service With PCE: Alternatvie 4 34

Table 10 - Cumulative Base (2015) Intersection Level of Service With PCE 35

Table 11 - Cumulative (2015) Plus Project Intersection Level of Service With PCE: Alternatvie 1 38

Table 12 - Cumulative (2015) Plus Project Intersection Level of Service With PCE: Alternatvie 2 39

Table 13 - Cumulative (2015) Plus Project Intersection Level of Service With PCE: Alternatvie 3 40

Table 14 - Cumulative (2015) Plus Project Intersection Level of Service With PCE: Alternatvie 4 41

Table 15 - Project Alternatives Impact Matrix 44

1. INTRODUCTION

Fehr & Peers conducted a traffic impact analysis for the proposed Tujunga Spreading Grounds (TSG) Enhancement Project. This analysis assesses potential traffic and circulation impacts that could result from truck and worker trips to and from the TSG during construction of the project.

PROJECT DESCRIPTION

The project site is located adjacent to the Sheldon-Arleta Landfill in the City of Los Angeles, and is generally bounded by Laurel Canyon Boulevard to the east, Roscoe Boulevard to the south, Canterbury Avenue to the west and the Tujunga Wash channel to the north. The project site consists of shallow basins and associated facilities which cover 160-acres. All project enhancements will be located within the existing 160-acre site. Figure 1 shows the regional location and the project site location, respectively.

The TSG are owned by the Los Angeles Department of Water and Power (LADWP) and have been operated by the Los Angeles County Flood Control District since 1990. The TSG operates by diverting storm water from the Tujunga Wash Channel and distributing it through the facility and allowing it to percolate into the San Fernando Groundwater Basin. The maximum intake of water at the TSG is 250 cubic feet per second (cfs) with a maximum percolation rate of 140 cfs. The facility has a current total storage volume of 100 acre-feet.

In the past, when the TSG recharged large amounts of water, methane gas from a nearby landfill would be released to nearby areas. This caused temporary restrictions to be placed on the TSG by the City of Los Angeles Bureau of Sanitation. These restrictions included limiting the maximum intake flow rate to 50 cfs and removing several basins from service. Recent landfill upgrades have limited the amount of methane released during TSG operations and allowed for full operation of the TSG facilities. Due to an increasing need for local water supplies and subsequent demand on groundwater supplies, improvements are proposed at the TSG facility to capture a larger volume of storm water than is currently possible.

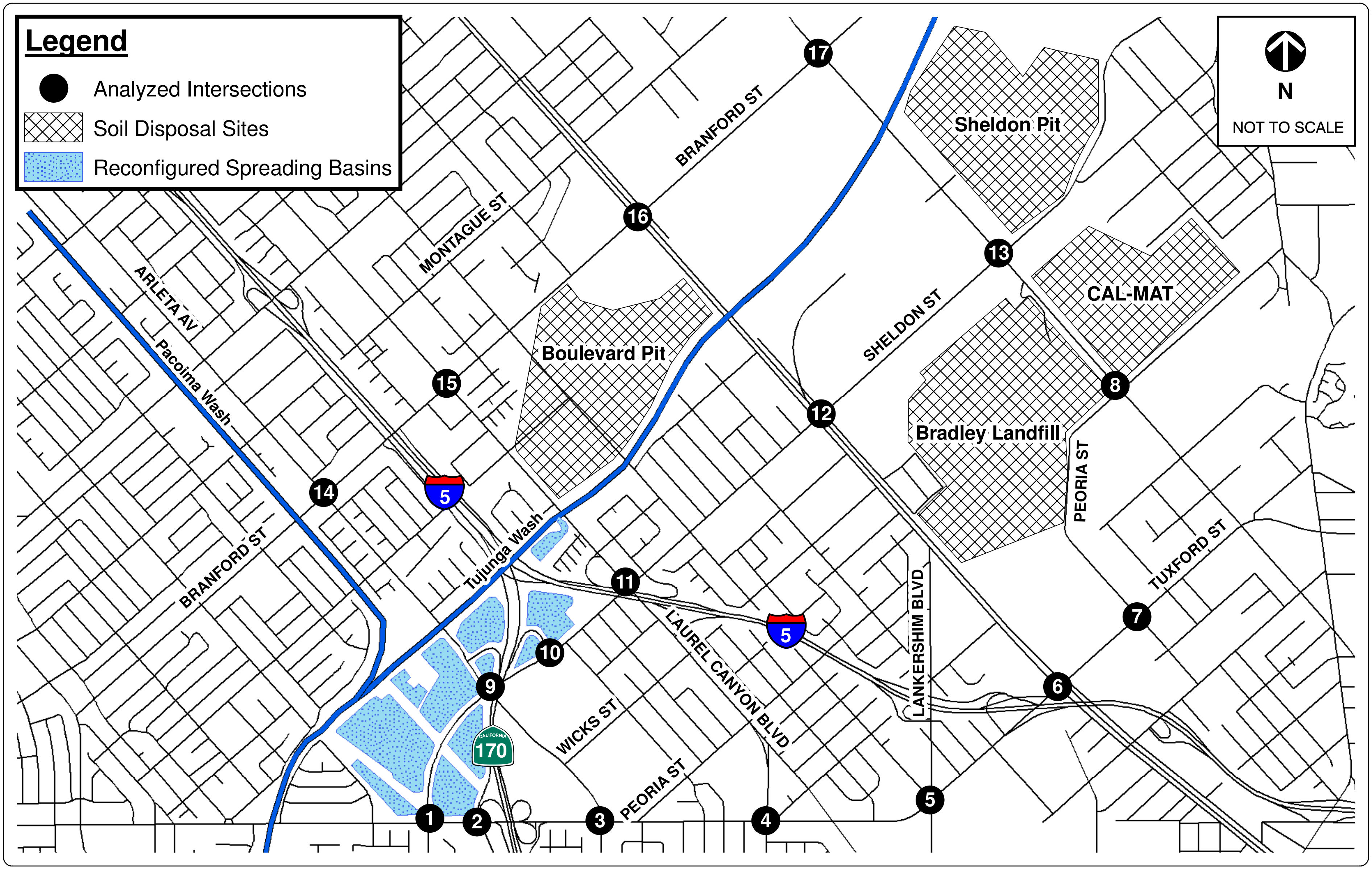
The main objectives of the proposed project are to:

- Increase the storm water recharge into the San Fernando Groundwater Basin through operation and enhancement of the TSG facility.
- Provide treatment to the storm water before recharging the groundwater.
- Allow for water intake from both the Tujunga Wash and Pacoima Wash watersheds.

The proposed project includes the following key components:

- Alter the current facility to capture low flows.
- Create a treatment area for low flows.
- Install two new intake facilities to capture high flows from the Tujunga Wash and Pacoima Wash Channels.
- Install devices to prevent the widespread distribution of trash within the TSG.
- Reactivate, deepen, and/or combine basins to increase the facility's storage and recharge capability.
- Install new inter-basin flow controls.
- Install telemetry on all diversion facilities.

Construction of the project is planned to occur between 2012 and 2015.



FEHR & PEERS

STUDY AREA AND ANALYZED INTERSECTIONS

FIGURE 1

STUDY SCOPE

This study evaluates the potential for construction period traffic impacts on the street system surrounding the project site. Due to the nature of the project, no increase in trips is anticipated during the operational phase of the project upon its completion. Potential traffic impacts for the project were evaluated during the peak hours of the typical weekday morning (7:00 to 10:00 AM) and afternoon (3:00 to 6:00 PM) peak periods. The following traffic scenarios were analyzed in the study:

- Existing Conditions (Year 2011) – This analysis of existing weekday AM and PM peak hour traffic conditions provides a basis for the assessment of future traffic conditions. The existing conditions analysis included a description of key area streets and highways, traffic volumes, current intersection operating conditions, and public transit service in the area.

- Existing plus Project (Year 2011) Conditions – This analysis identified the temporary impacts of the proposed project on the existing traffic conditions by adding the construction-related traffic expected to be generated by the project to the existing traffic volumes.

- Cumulative Base (Year 2015) Conditions – This scenario projected the future traffic growth and intersection operating conditions that could be expected from regional growth and known "related projects" in the vicinity of the project site by year 2015. These analyses provide the cumulative baseline conditions against which project impacts were evaluated.

- Cumulative plus Project (Year 2015) Conditions – This analysis identified the temporary incremental impacts of the proposed project on future traffic operating conditions by adding the construction-related traffic expected to be generated by the project to the cumulative base traffic forecasts.

The study examined seventeen intersections in the vicinity of the project site for each of the above traffic scenarios. The study intersections are listed below and illustrated in Figure 1.

1. Sheldon Street & Roscoe Boulevard
2. State Highway 170 (SR 170) Southbound Off-Ramp & Roscoe Boulevard
3. Arleta Avenue & Roscoe Boulevard
4. Laurel Canyon Boulevard & Roscoe Boulevard
5. Lankershim Boulevard & Roscoe Boulevard
6. San Fernando Road & Tuxford Street
7. Bradley Avenue & Tuxford Street
8. Glenoaks Boulevard & Peoria Street
9. Arleta Avenue & Sheldon Street
10. State Highway 170 (SR 170) Northbound Off-Ramp & Sheldon Street
11. Laurel Canyon Boulevard & Sheldon Street
12. San Fernando Road & Sheldon Street
13. Glenoaks Boulevard & Sheldon Street
14. Arleta Avenue & Branford Street

15. Laurel Canyon Boulevard & Branford Street
16. San Fernando Road and Branford Street
17. Glenoaks Boulevard & Branford Street

ORGANIZATION OF REPORT

This report is divided into six chapters, including this introduction. Chapter 2 describes the existing circulation system, traffic volumes, intersection operating conditions of the street system, as well as existing public transit service in the study area. Chapter 3 describes the methodologies used to develop future cumulative traffic forecasts and project traffic volumes. Chapter 4 presents an assessment of potential temporary traffic impacts on intersection operations in the vicinity of the project site. Chapter 5 contains the results of the Congestion Management Program (CMP) regional transportation system impact analysis for the project. Chapter 6 summarizes the conclusions of the study and the recommendations intended to mitigate the adverse impacts expected to occur during the construction process.

2. EXISTING CONDITIONS

A comprehensive data collection effort was undertaken to develop a detailed evaluation of existing transportation conditions in the study area. The assessment of existing conditions in the project study area includes a description of the street and highway system, traffic volumes on these facilities, operating conditions of the selected intersections and public transit services.

EXISTING STREET SYSTEM

Primary regional access to the project site is provided by the Golden State Freeway (I-5) and the Hollywood Freeway (SR 170). I-5 runs in the north/south direction just east of the project site; SR 170 runs in the north/south direction through the project site before ending at the I-5 near the project site. The characteristics of the existing street system can be found in Table 1. The following is a brief description of the major streets serving the project site:

- Glenoaks Boulevard – Glenoaks Boulevard is classified as a Major Highway Class II and runs north/south east of the TSG providing regional access to SR-118 and I-5. It provides two lanes in each direction and is divided by a two-way left-turn median. On-street parking is generally permitted on both sides of the Glenoaks Boulevard and the posted speed limit is 45 MPH.

- San Fernando Road – San Fernando Road is classified as a Major Highway Class II and runs north/south providing access to SR 118 to the north. It generally provides two lanes in each direction and is divided by a two-way left-turn median. Limited on-street parking is generally allowed on southbound side of San Fernando Boulevard and the posted speed limit is 35 MPH.

- Laurel Canyon Boulevard – Laurel Canyon Boulevard is classified as a Major Highway Class II and runs north/south just east of the project site. It provides two lanes in each direction and is divided by a two-way left-turn median. On-street parking is generally allowed on both sides of Laurel Canyon Boulevard and the posted speed limit is 35 MPH.

- Arleta Avenue – Arleta Avenue is classified as a Secondary Roadway and runs north/south through the project site providing direct access to SR 170. It provides two lanes in each direction and is generally divided by a two-way left-turn lane. On-street parking is allowed on some segments of Arleta Avenue and the posted speed limit is 40 MPH.

- Roscoe Boulevard – Roscoe Boulevard is classified as a Major Highway Class II and runs east/west immediately south of the project site. It generally provides two lanes in each direction and is divided by several different medians including double yellow lines, raised medians, and two-way left-turn medians. On-street parking is generally permitted on both sides of Roscoe Boulevard and the posted speed limit is 35 MPH.

- Sheldon Street – Sheldon Street is classified as a Secondary Roadway and runs east/west through the project site providing access to I-5 east of the project site. It provides two lanes in each direction and is divided by a double yellow line median. On-street parking is permitted on both sides of Sheldon Street and the posted speed limit is 40 MPH.

- Branford Street – Branford Street is classified as a Secondary Roadway and runs east/west north of the project site, providing access to I-5. It generally provides one travel lane in the eastbound direction and two lanes in the westbound direction and is generally divided by a two-way left-turn median. On-street parking is generally allowed on Branford Street and the posted speed limit is 35 MPH.

TABLE 1
EXISTING (2011) SURFACE STREET CHARACTERISTICS

SEGMENT	FROM	TO	LANE		MEDIAN	PARKING RESTRICTIONS		SPEED	ROAD
			NB/EB	SB/WB	TYPE	NB/EB	SB/WB	LIMIT	TYPE
Glenoakds Blvd	Osborne Pl	Branford St	2	2	2LT	PA	PA	45	H
	Branford St	Creek	2	2	RM	NSAT	NSAT	45	H
	Canal?	Sheldon St	2	2	2LT	PA	PA	45	H
	Sheldon St	Pendleton St	2	2	2LT	NSAT	PA	45	H
	Pendleton St	Sunland Blvd	2	2	2LT	PA (NSAT 9pm-6am)	PA (NSAT 9pm-6am)	45	H
San Fernando Rd	Osborne St	Branford St	2	2	DY	NSAT	PA	35	H
	Branford St	Sheldon St	2	2	2LT	NSAT	NSAT	35	H
	Sheldon St	Art St	2	2	DY	NSAT	2HR, 8am-6pm	35	H
	Art St	Penrose St	2	2	2LT	NSAT	PA	35	H
Laurel Canyon Blvd	Osborne St	Montague St	2	2	2LT	PA	NSAT	35	H
	Montague St	Rangoon St	2	2	2LT	PA	PA	35	H
	Rangoon St	Creek	2	2	2LT	2HR, 8am-6pm (NSAT 10pm-6am)	PA	35	H
	Creek	Sheldon St	2	2	2LT	PA	PA	35	H
	Sheldon St	Wicks St	2	2	2LT	NSAT	PA (NSAT 2am-6am)	35	H
	Wicks St	Roscoe Blvd	2	2	2LT	NSAT	NSAT	35	H
	Roscoe Blvd	Strathern St	2	2	2LT	PA	PA	35	H
Arleta Ave	Osborne St	Montague St	2	2	2LT	NSAT	PA	40	S
	Montague St	Branford St	2	2	DY	PA	PA	40	S
	Branford St	Roscoe Blvd	2	2	2LT	NSAT	NSAT	40	S
Roscoe Blvd	Woodland Ave	Coldwater Canyon Ave	3	3	2LT	2HR, 8-6pm (NSAT: 7am-9am,4pm-7pm)	2HR, 8-6pm (NSAT: 7am-9am,4pm-7pm)	35	H
	Coldwater Canyon Ave	SR-170 Off-ramps	3	3	RM	NSAT	NSAT	35	H
	SR-170 Off-ramps	Arleta Ave	2	2	DY	PA	PA	35	H
	Arleta Ave	Peoria St	2	2	DY	PA	PA	35	H
	Peoria St	Laurel Canyon Blvd	2	2	2LT	PA	NSAT	35	H
	Laurel Canyon Blvd	Webb Ave	2	2	2LT	PA	PA	35	H
	Webb Ave	Lankershim Blvd	2	2	2LT	PA	NSAT	35	H
Whitsett Ave	Roscoe Blvd	Strathem St	2	2	DY	PA	PA	35	S
Webb Ave	Laurel Canyon Blvd	Strathern St	2	2	2LT	PA	PA	35	C
Lankershim Blvd	San Fernando Rd	Strathern St	2	2	2LT	PA	PA	35	H
Branford St	Woodman Ave	Sharp Ave	2	2	DY	PA	PA	35	S
	Sharp Ave	Laurel Canyon Blvd	2	2	2LT	NSAT	PA	35	S
	Laurel Canyon Blvd	San Fernando Rd	1	2	2LT	PA	PA	35	S
	San Fernando Rd	Glenoaks Blvd	1	2	DY	NSAT	PA	35	S
Sheldon St	Roscoe Blvd	Haddon Ave	2	2	DY	NSAT	NSAT	40	S
	Haddon Ave	Telfair Ave	2	2	DY	PA (NSAT 7am-5pm school days)	PA	40	S
	Telfair Ave	San Fernando Rd	2	2	DY	PA	NP	40	S
	San Fernando Rd	Glenoaks Blvd	2	2	2LT	PA	PA	40	S
	Glenoaks Blvd	Stonehurst Ave	2	2	2LT	NSAT	NSAT	45	S
Tuxford St	Lankershim Blvd	Sunland Blvd	2	2	2LT	PA	PA	35	H
Coldwater Canyon Ave	Strathern St	Cantara St	2	2	DY	PA	PA	35	S
	Cantara St	Roscoe Blvd	2	2	DY	NSAT	PA	35	S

Notes:

MEDIAN TYPE: DY = Double Yellow Centerline
2LT = Dual Left Turn Centerline
RM = Raised Median
RM = Raised Median
LANES: # = Number of lanes

PARKING: PA = Parking Allowed
NSAT = No Stopping Anytime
ROAD TYPE: C = Collector
H = Major Highway Clss II
S = Secondary

- Tuxford Street – Tuxford Street is classified as a Major Highway Class II and runs east/west to the south of the project site. It provides two lanes in each direction and is divided by a double yellow line median. On street parking is generally allowed on both sides of Tuxford Boulevard and the posted speed limit is 35 MPH.

- Lankershim Boulevard – Lankershim Boulevard is classified as a Major Highway Class II and runs north/south east of the project site providing access to I-5. It provides two lanes in each direction and is divided by a two-way left-turn lane. On-street parking is allowed on both sides of Lankershim Boulevard and the posted speed limit us 35 MPH.

EXISTING TRANSIT SERVICE

Public transit services operating in the project area are operated by the Los Angeles County Metropolitan Transportation Authority (Metro) system. Bus routes and their frequencies during the weekday morning (7:00 – 10:00 AM) and weekday afternoon (3:00 – 6:00 PM) peak periods are detailed as follows:

- Metro Line 152 – This line travels north/south from the Fallbrook Center to the North Hollywood Metro Red Line Station via Fallbrook Avenue, Roscoe Boulevard, Tuxford Street, Glenoaks Boulevard, Sunland Boulevard, and Vineland Avenue. Adjacent to the project site, this line travels along Roscoe Boulevard and Tuxford Street with an AM and PM peak period headways ranging between 10 and 20 minutes.

- Metro Line 224 – This line travels north/south from the Sylmar Metrolink Station to the Universal City Metro Station via Truman Street, San Fernando Road, Lankershim Boulevard, Roxford Street, and Foothill Boulevard. Near the project site, this line travels along Lankershim Boulevard with an AM and PM peak period headways ranging between 10 and 20 minutes.

- Metro Line 230 – This line travels north/south from the Sylmar Metrolink Station to downtown via Laurel Canyon Boulevard. Adjacent to the project site, this line travels along Laurel Canyon Boulevard with an AM and PM peak period headways ranging between 10 and 20 minutes.

- Metro Line 292 – This line travels north/south from the Sylmar Metrolink Station to the Burbank Metrolink Station via Glenoaks Boulevard. In the vicinity of the project site, this line travels along Glendale Boulevard with an AM and PM peak period headways ranging between 25 and 30 minutes.

- Metro Line 794 – This line travels north/south from the Sylmar Metrolink Station to the downtown Los Angeles via San Fernando Road and Hill Street. In the vicinity of the project site, this line travels mainly along San Fernando Road with an AM and PM peak period headways ranging between 20 and 30 minutes.

EXISTING BICYCLE FACILITIES

Biking and walking are non-motorized transportation modes that typically serve shorter trips than do motorized travel modes. In the area around the TSG, bikeways facilitate and encourage this mode of non-motorized transportation. Class I bikeways are separate off-street paths, Class II bikeways are striped lanes within streets, and Class III bikeways are signed bicycle routes.

Bikeways can be found at the following locations:

- A Class II Bikeway exists on Roscoe Boulevard between Arleta Avenue and Lankershim Boulevard
- A Class II Bikeway exists on Laurel Canyon Boulevard between Peoria Street and Strathern Street
- A Class II Bikeway exists on Glenoaks Boulevard between Osborne Street and Sunland Boulevard
- A Class II Bikeway exists on Wentworth Street between Sheldon Street and Stonehust Avenue.
- A Class III Bikeway exists on Sheldon Street between Glenoaks Boulevard and Wentworth Street.

EXISTING TRAFFIC VOLUMES AND LEVELS OF SERVICE

The following sections describe the peak hour traffic volumes, the methodology used to analyze the intersection operating conditions, and the resulting levels of service (LOS) for the selected study intersections under existing conditions. Lane configurations at the study intersections are illustrated in Appendix A.

Existing Traffic Volumes

Traffic volumes at the seventeen study intersections were collected during the morning and afternoon peak periods (from 7:00 AM to 10:00 AM and 3:00 PM to 6:00 PM, respectively) in June 2011 and are included in Appendix B. Due to a high percentage of heavy truck volumes in the study area and the nature of the study, vehicle classifications were included in the data collection effort. Existing peak hour traffic volumes with passenger-car equivalent (PCE) adjustments are illustrated in Figure 2 and shown in Appendix C on Table C-1. PCE factors of 1.0, 1.1, and 2 were used for passenger vehicles, bobtail trucks and buses, and heavy trucks, respectively, to account for the influence of heavy vehicles in the traffic stream.

Level of Service Methodology

In accordance with City of Los Angeles Department of Transportation (LADOT) procedures, the "Critical Movement Analysis-Planning" (Transportation Research Board, 1980) method of intersection capacity analysis was used to determine the intersection volume-to-capacity (V/C) ratio and corresponding LOS for the turning movements and intersection characteristics at the seventeen signalized study intersections. The Computer Assisted Level of Service Calculations and Database (CALCADB) spreadsheet[1] developed by LADOT was used to implement the Critical Movement Analysis (CMA) methodology. In accordance with LADOT practices, a 7% (0.07 V/C credit) increase in capacity was assumed on major and secondary street segments to reflect the benefits of the existing Automated Traffic Surveillance and Control (ATSAC) system. Additionally, all study intersections are assumed to operate under the Automated Traffic Control Systems (ATCS). In accordance with standard LADOT procedures,

---

[1] The CalcaDB Lite Beta 1 spreadsheet was used, which was provided by LADOT staff on 5/25/2011.

an additional capacity of 3% (0.03 V/C credit) was applied to reflect the benefits of ATCS at these intersections[2].

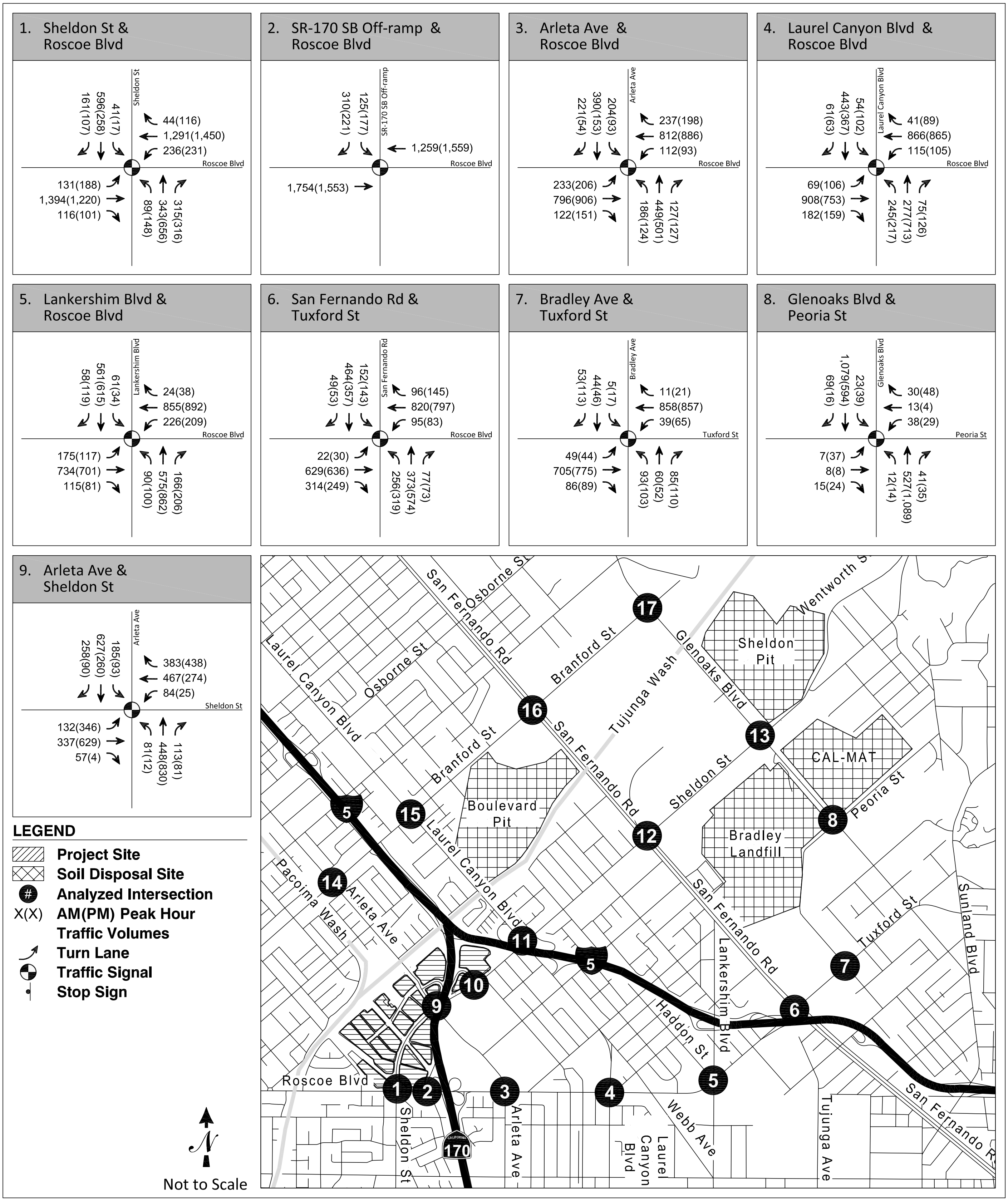
The ranges of V/C ratios and corresponding LOS for signalized intersections are included in Table 2. A detailed assessment of the existing operating conditions at the 17 intersections, including the V/C ratio and corresponding LOS at each of the study intersections during the morning and afternoon peak hours can be found in Table 3.

Existing Intersection Levels of Service

All of the 17 analyzed intersections are currently operating at acceptable levels of service, with none operating at LOS E or F during any of the peak hours, as shown in Table 3. Detailed LOS calculations are provided in Appendix C.

---

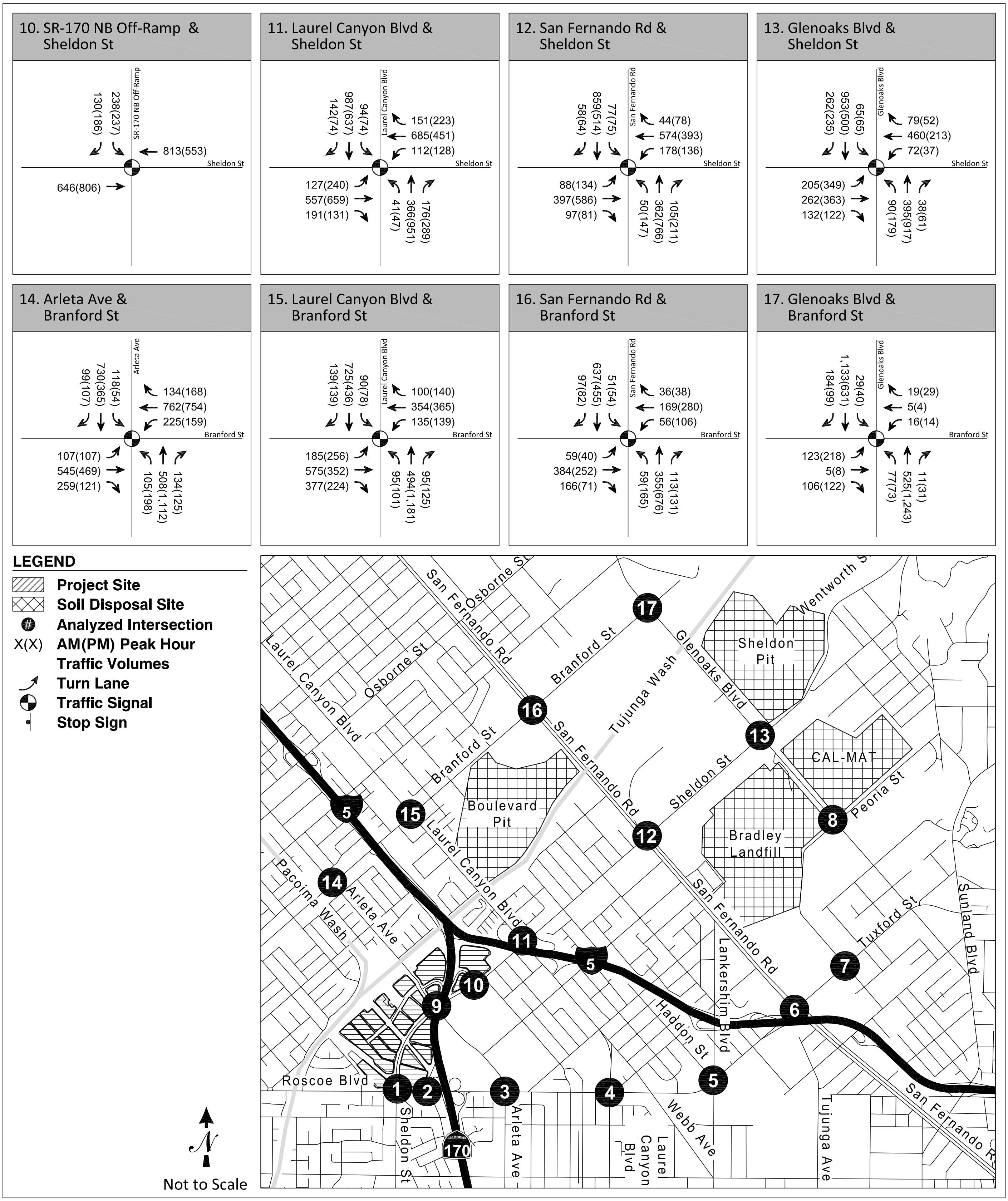
[2] Information reading ATSAC and ATCS was received from LADOT staff on 7/21/2011.



EXISTING (2011) CONDITIONS
PEAK HOUR TRAFFIC VOLUMES WITH PCE

FIGURE 2

Oct 11, 2011 SK
\\fpla1\data\Jobs\Active\2300s\2393 – Tujunga Spreading Grounds Enhancement Project EIR\Graphics\ACAD\Volumes_Base.dwg



EXISTING (2011) CONDITIONS
PEAK HOUR TRAFFIC VOLUMES WITH PCE

FIGURE 2 (Contd)

FEHR PEERS

TABLE 2
LEVEL OF SERVICE DEFINITIONS FOR SIGNALIZED INTERSECTIONS

Level of Service	Volume/Capacity Ratio	Definition
A	0.000 - 0.600	EXCELLENT. No vehicle waits longer than one red light and no approach phase is fully used.
B	>0.600 - 0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	>0.700 - 0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	>0.800 - 0.900	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	>0.900 - 1.000	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 1.000	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.

Note:
Source: *Traffic Study Policies & Procedures,* City of Los Angeles Department of Transportation, August 2011

TABLE 3
EXISTING (2011) INTERSECTION LEVEL OF SERVICE ANALYSIS WITH PCE

Intersections	Peak Hour	Existing	
		V/C or Delay	LOS
1. Sheldon Street	AM	0.747	C
& Roscoe Boulevard	PM	0.751	C
2. SR-170 SB Off-Ramp	AM	0.497	A
& Roscoe Boulevard	PM	0.394	A
3. Arleta Avenue	AM	0.677	B
& Roscoe Boulevard	PM	0.622	B
4. Laurel Canyon Boulevard	AM	0.653	B
& Roscoe Boulevard	PM	0.626	B
5. Lankershim Boulevard	AM	0.608	B
& Roscoe Boulevard	PM	0.648	B
6. San Fernando Road	AM	0.604	B
& Tuxford Street	PM	0.627	B
7. Bradley Avenue	AM	0.328	A
& Tuxford Street	PM	0.361	A
8. Glenoaks Boulevard	AM	0.349	A
& Peoria Street	PM	0.368	A
9. Arleta Avenue	AM	0.659	B
& Sheldon Street	PM	0.774	C
10. SR-170 NB Off-Ramp	AM	0.294	A
& Sheldon Street	PM	0.310	A
11. Laurel Canyon Boulevard	AM	0.666	B
& Sheldon Street	PM	0.653	B
12. San Fernando Road	AM	0.579	A
& Sheldon Street	PM	0.652	B
13. Glenoaks Boulevard	AM	0.595	A
& Sheldon Street	PM	0.571	A
14. Arleta Ave	AM	0.631	B
& Branford Street	PM	0.685	B
15. Laruel Canyon Boulevard	AM	0.613	B
& Branford Street	PM	0.685	B
16. San Fernando Road	AM	0.530	A
& Branford Street	PM	0.571	A
17. Glenoaks Boulevard	AM	0.489	A
& Branford Street	PM	0.509	A

Note:
[a] All counts conducted in 2011.

3. FUTURE TRAFFIC PROJECTIONS

Potential project impacts were assessed against existing conditions as well as cumulative conditions to evaluate the potential impacts of the proposed project on the surrounding street system. Under cumulative conditions it was necessary to develop estimates of future traffic conditions in the study area both with and without the proposed project's traffic. First, estimates of traffic growth were developed for the study area to forecast future conditions without the project. These forecasts included traffic increases as a result of both regional ambient traffic growth and traffic generated by specific developments in the vicinity of the project (related projects). These projected traffic volumes, identified herein as the cumulative base conditions, represent the future study year conditions without the proposed project. The traffic generated by the proposed project was then estimated and assigned to the surrounding street system. The project traffic was added to the cumulative base to form the cumulative plus project traffic conditions, which were analyzed to determine the incremental traffic impacts attributable to the project itself.

The assumptions and analysis methodology used to develop each of the future traffic scenarios discussed above are described in more detail in the following sections.

PROJECT TRAFFIC PROJECTIONS

The traffic projections for the proposed project were developed using three steps: estimating the trip generation of the project, determining trip distribution, and assigning the project traffic to the roadway system based on assumptions made about excavation methods and routes.

Project Alternatives

Four separate and distinct project alternatives were developed and analyzed to provide traffic projections while soil is being transported from the TSG removal sites to one of four disposal site alternatives. Two scenarios were created for each alternative to accurately represent all likely truck movements while soil is being excavated and transported out of the TSG. The locations of the potential disposal sites, TSG, and relevant driveways can be found in Figure 3. The four alternatives and two scenarios for each alternative are described below:

- Alternative 1: Boulevard Pit Disposal Site

  Trucks will travel to the Boulevard Pit disposal facility by heading northbound on Arleta Avenue and will turn right onto Branford Street. Trucks will then make a right turn from Branford Street to enter the Boulevard Pit, and will utilize the same driveway to exit the pit. Trucks will return to the TSG by making a right turn out of the Boulevard Pit driveway and head eastbound on Branford Street. Trucks will then make a right turn onto San Fernando Road, followed by a right turn onto Sheldon Street to the TSG. The truck routing for Alternative 1 can be seen in Figure 4.

- Alternative 2: Sheldon Pit Disposal Site

  Trucks will travel to the Sheldon Pit disposal site by heading eastbound on Sheldon Street. Trucks will make a left turn from Sheldon Street to enter the Sheldon Pit, and will utilize the same driveway to exit the pit. Trucks will return to the TSG by traveling westbound on Sheldon Street. The truck routing for Alternative 2 can be seen in Figure 5.

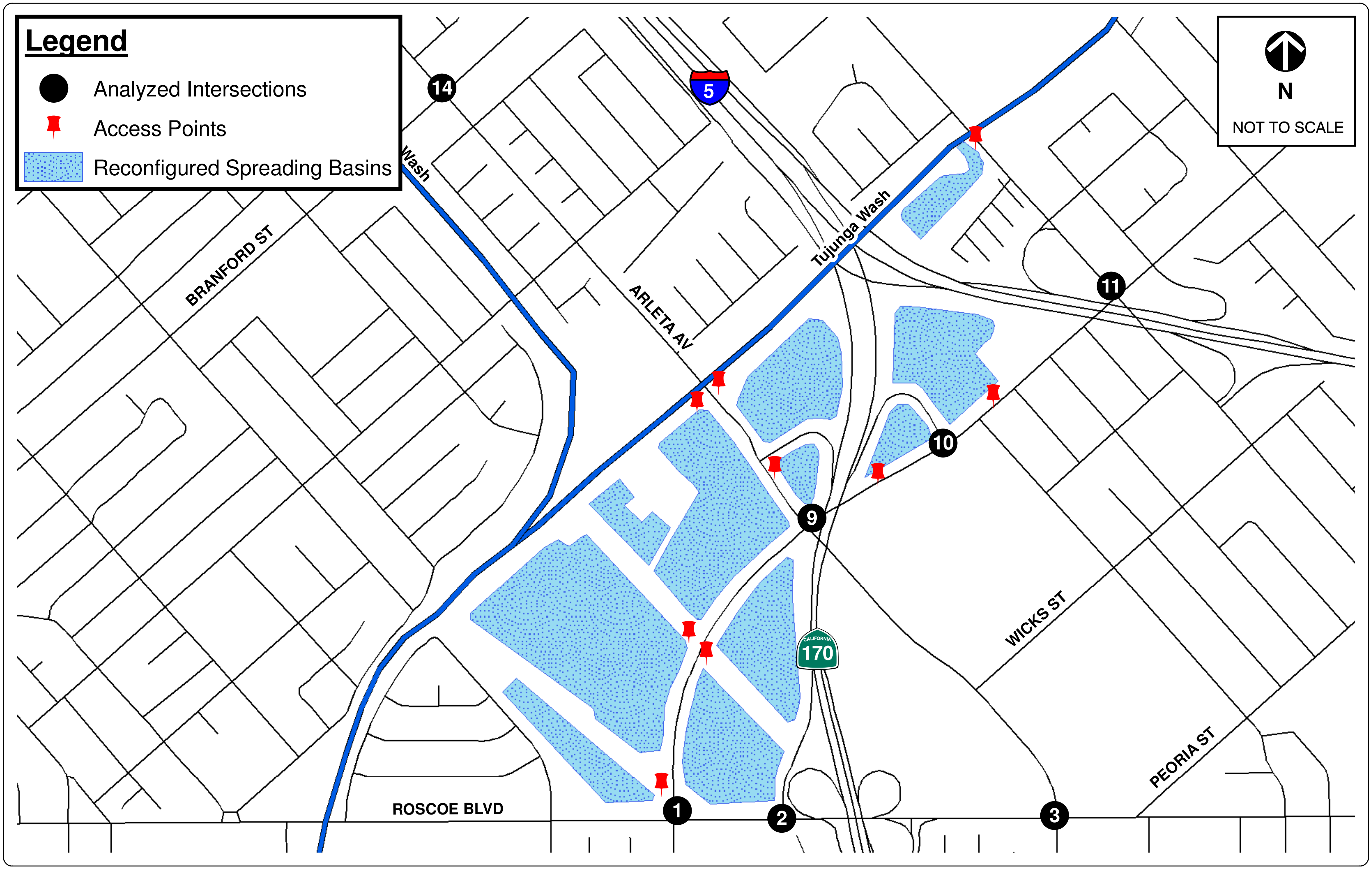
- Alternative 3: CAL-MAT Disposal Site

  Trucks will travel to the CAL-MAT disposal site by heading eastbound on Sheldon Street. Trucks will make right turn from Sheldon Street and enter the CAL-MAT pit. Truck exiting the pit must use the exit on Glenoaks Boulevard and must make a right turn. Trucks will return to the TSG by traveling northbound on Glenoaks Boulevard and will then make a left turn onto Sheldon Street. The truck routing for Alternative 3 can be seen in Figure 6.

- Alternative 4: Bradley Landfill Disposal Site

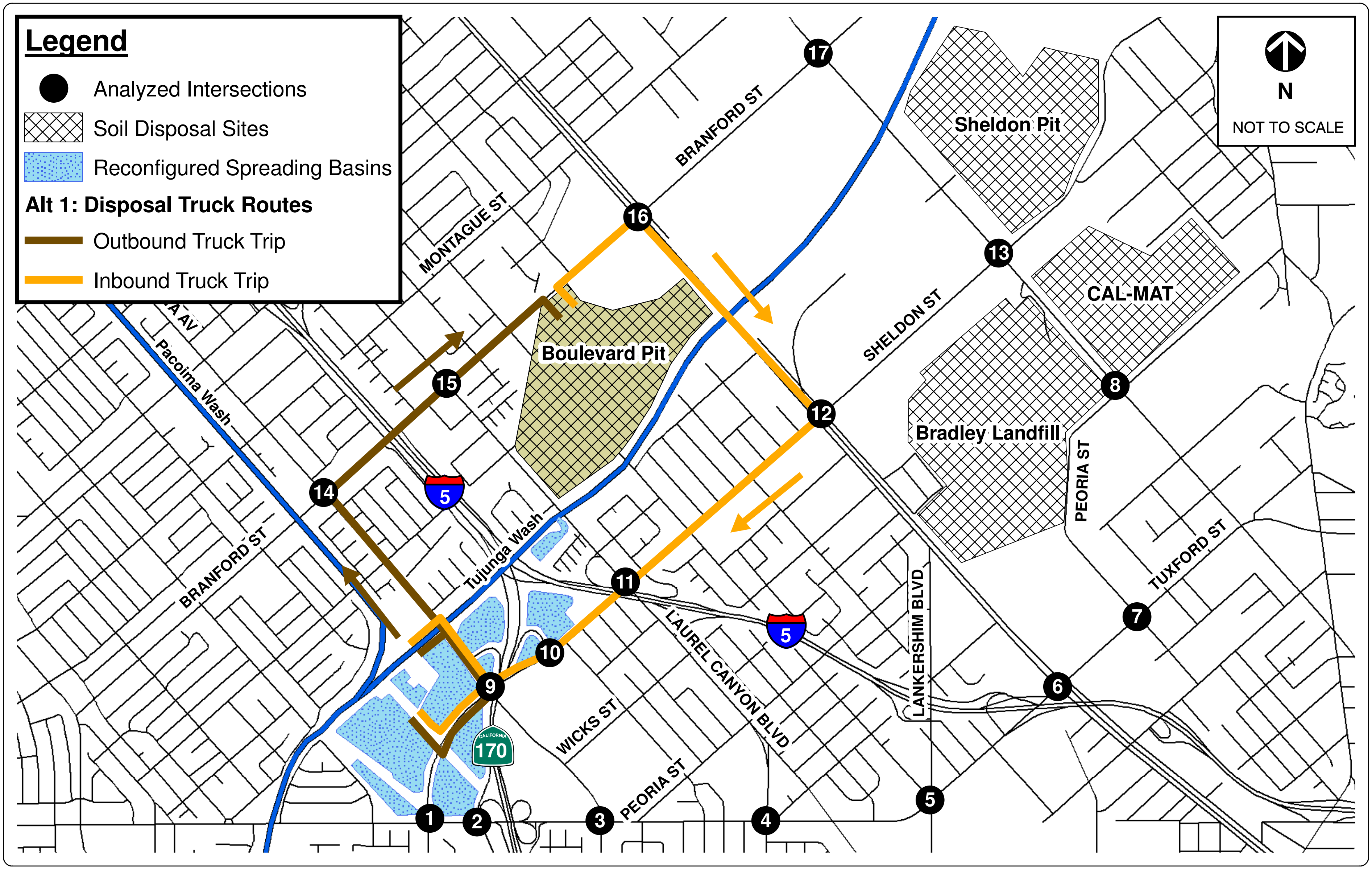
  Trucks will travel to the Bradley Landfill disposal site by heading eastbound on Sheldon Street and will turn right onto Glenoaks Boulevard, followed by a right turn onto Peoria Street. Trucks will make right turn from Peoria Street to enter the Bradley Landfill, and will utilize the same driveway to exit the site. Trucks will return to the TSG by traveling south on Bradley Avenue and will make a right turn onto Tuxford Street. Trucks will continue onto Roscoe Boulevard and make a right onto Sheldon Street. The truck routing for Alternative 4 can be seen in Figure 7.

Each of the proposed alternatives consists of two separate scenarios. These scenarios provide a different entrance and exit location for trucks entering and leaving the TSG. The first scenario accounts for trucks that enter and exit the TSG via a driveway off of Sheldon Street while the second scenario accounts for trucks that enter and exit the TSG via a driveway off of Arleta Avenue. Both of these scenarios were analyzed in order to evaluate all possible turning movement combinations at the intersections, and thus this study provides a conservative analysis of the potential project impacts.

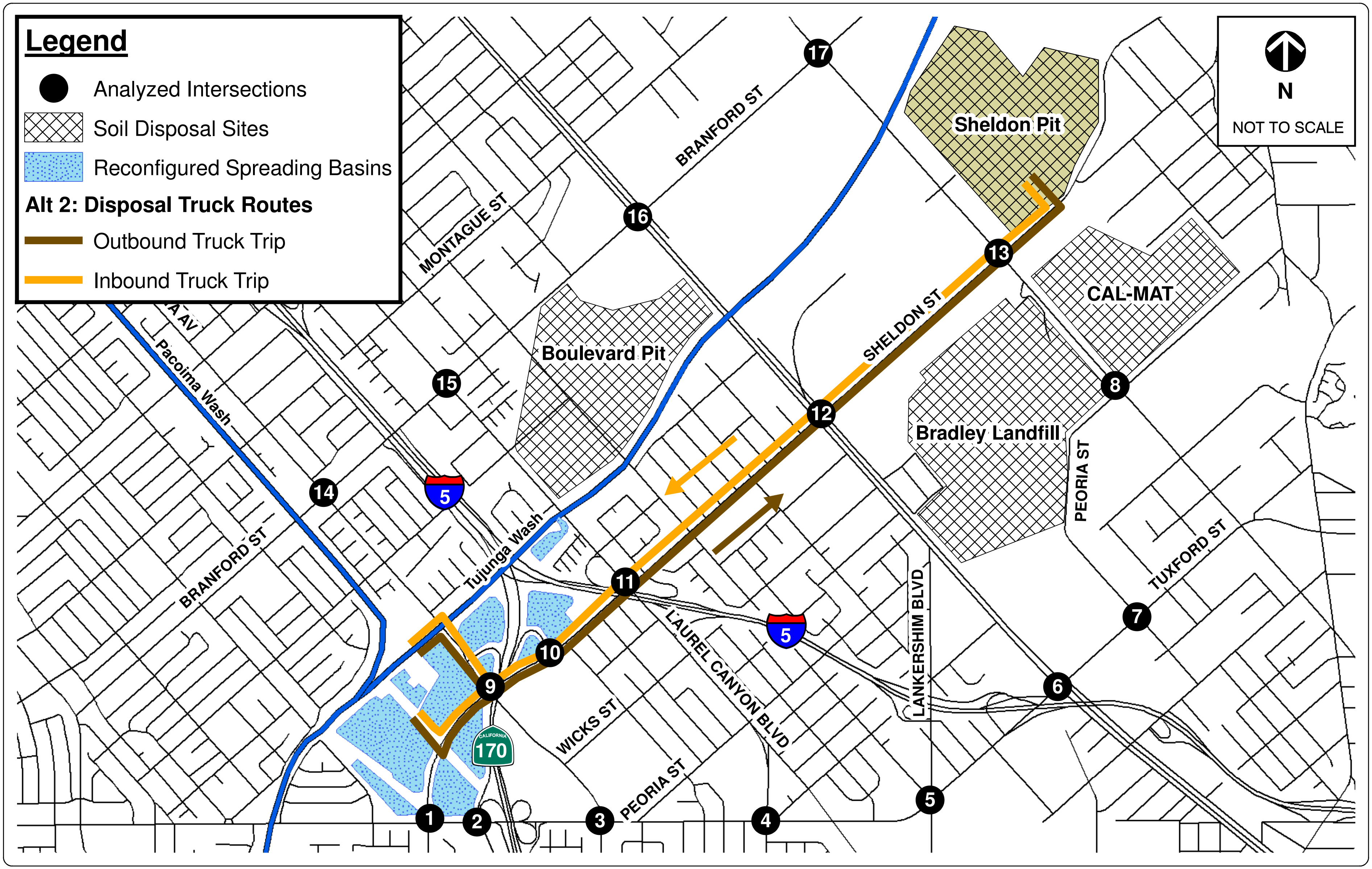


PROJECT SITE AND ACCESS POINTS

FIGURE 3



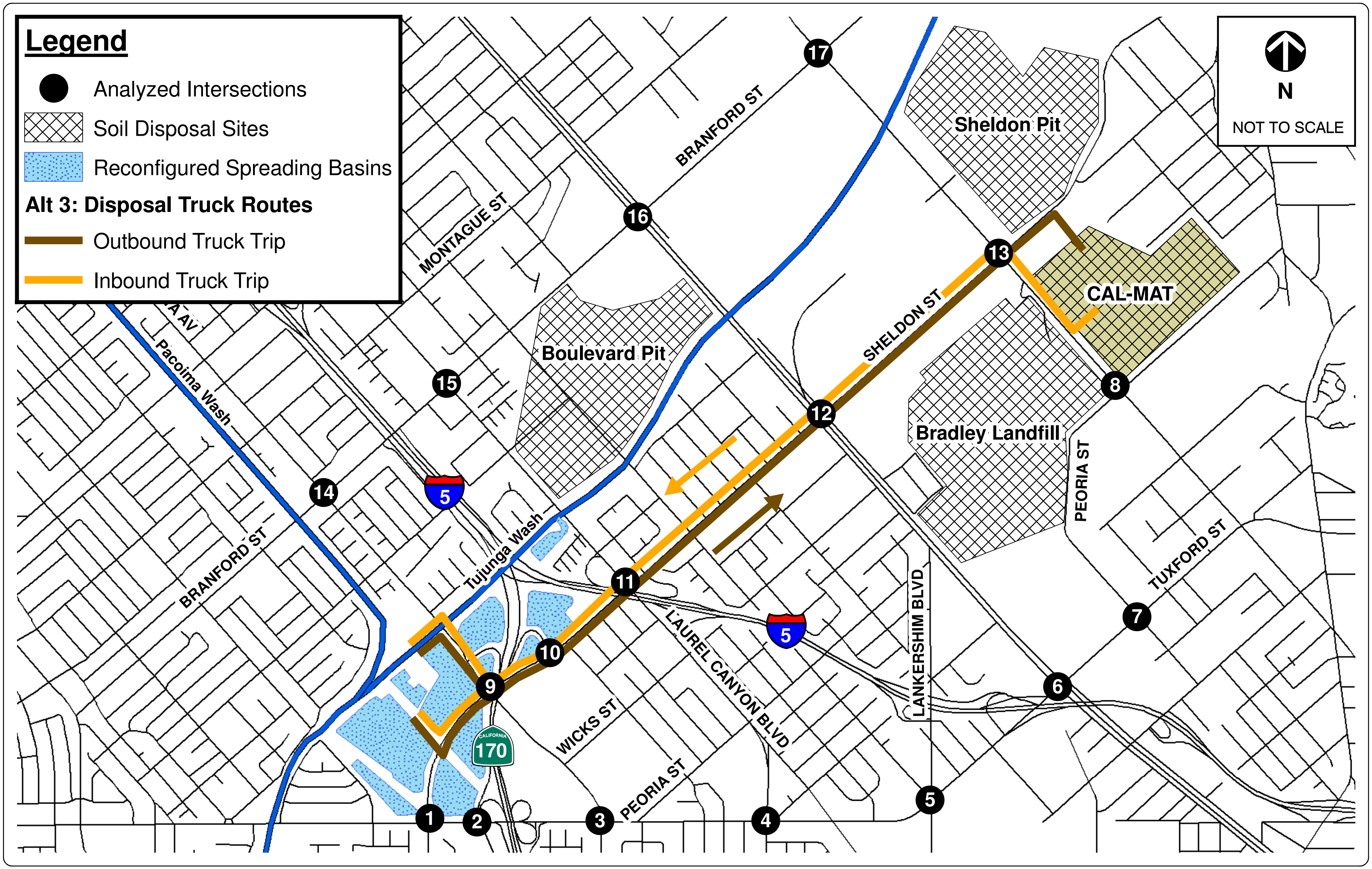
ALTERNATIVE 1 - BOULEVARD PIT
RECOMMENDED TRUCK ROUTING PLAN
FIGURE 4



FEHR & PEERS

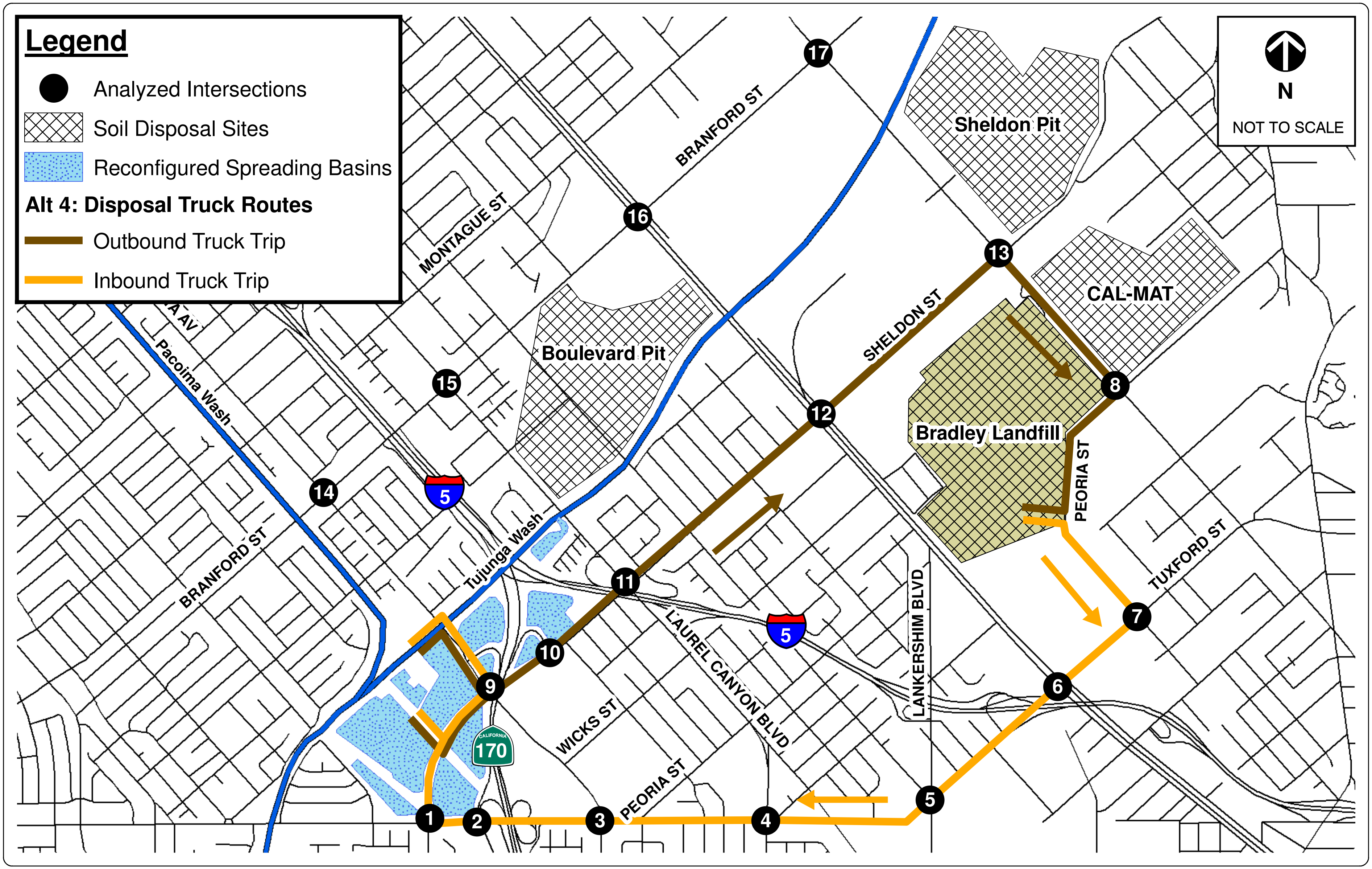
ALTERNATIVE 2 - SHELDON PIT
RECOMMENDED TRUCK ROUTING PLAN

FIGURE 5



FEHR PEERS

ALTERNATIVE 3 - CAL-MAT
RECOMMENDED TRUCK ROUTING PLAN
FIGURE 6



FEHR & PEERS

ALTERNATIVE 4 - BRADLEY LANDFILL
RECOMMENDED TRUCK ROUTING PLAN
FIGURE 7

Project Traffic Generation

Based on information provided by LADWP staff, it was assumed that a maximum of approximately 20 to 40 workers would be required for soil removal. A conservative assumption of 40 workers, all arriving and departing within the AM and PM peak hours, respectively, was used. Based on discussions with LADWP staff, it was assumed that up to four work sites within the project site could be under construction simultaneously, and that each work site would be serviced by four trucks to haul the excavated soil (16 in all). To provide a conservative analysis, peak activity was analyzed which assumed all trucks would arrive and depart from the TSG during peak hours. For the purposes of this study, each truck was assumed to make 16 trips per day (one inbound and one outbound) and was factored into the analysis as 2.0 passenger car equivalents (PCE) (since truck trips create a greater impact on traffic operations than automobiles). The estimated daily truck trips were assumed to occur evenly over the work day.

It is assumed that the proposed project would generate approximately 136 PCE trips during both the AM and PM peak hours with 104 inbound and 32 outbound trips during the AM peak hour and 32 inbound and 104 outbound trips during the PM peak hour.

Project Traffic Distribution

Along with the distribution routes described above the four different project alternatives, a worker trip distribution was also developed. Since the exact origin and destination of the worker and truck trips is unknown at this time, a generalized distribution was used, which assumed:

- 25% to and from the north via the I-5 Freeway
- 25% to and from the south via the SR 170 Freeway
- 25% to and from the east via the I-5 Freeway
- 25% to and from the west via city streets (Roscoe Boulevard)

This generalized worker trip distribution accounts for both the workers and disposal trucks arriving at the TSG in the morning and leaving in the afternoon. The worker and disposal truck trip distribution is shown in Figure 8.

Project Traffic Assignment

The City of Los Angeles allows major and secondary arterials to be used as truck routes. The City’s policy is to allow trucks to also travel in a “reasonable fashion” to and from a work site, including over collector and local streets. The City of Los Angeles reviews each haul-route permit for specific application of its general guidelines. Potential haul routes in the City of Los Angeles for the project include segments of Branford Street, Sheldon Street, Roscoe Boulevard, Tuxford Street, Glenoaks Boulevard, San Fernando Road, Laurel Canyon Boulevard, and Arleta Avenue. While the City of Los Angeles Municipal (LAMC) prohibits the use of certain segments of specific streets by vehicles over 6,000 gross weight (LAMC Section 80.36.1), none of recommended truck routes utilize these segments, nor any local or collector roads. All roadways assumed for use as haul routes are classified as by the City of Los Angeles as Secondary roadways or Major Highways.

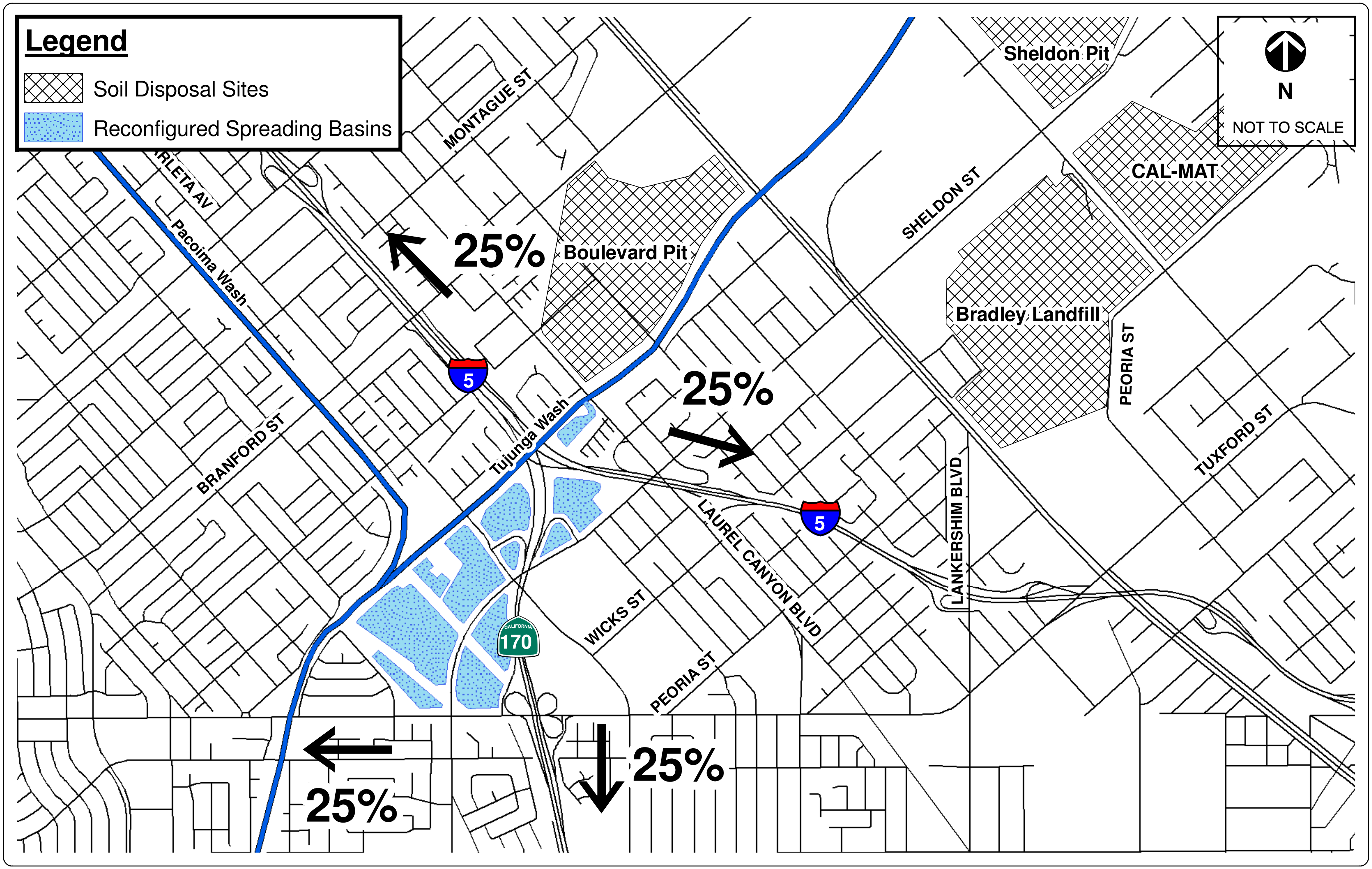
The proposed project only traffic volumes by alternative and scenario can be found in Appendix C on Tables C-2 though C-9.

TABLE 4
ESTIMATED PEAK HOUR PROJECT TRIP GENERATION

Trip Type	Trip Generation						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Worker Trips	80	40	0	40	0	40	40
Arrival/Departure Truck Trips	64	32	0	32	0	32	32
Disposal Site Truck Trips	512	32	32	64	32	32	64
Total Trips with PCE	656	104	32	136	32	104	136

Notes:

1. Hourly trips refers to the number of trips expected to occur during the AM and PM Peak hours.
2. Truck Trips are over 8 hour times 2-way trips (in =1 trip, out = 1 trip), rounded.
3. Truck Trips include PCE factor of 2.0.



FEHR PEERS

WORKER TRIP DISTRIBUTION
FIGURE 8

EXISTING PLUS PROJECT TRAFFIC PROJECTIONS

The proposed project traffic volumes shown in Appendix C on Tables C-2 through C-9 were then added to the existing traffic volumes to develop the existing plus project traffic forecasts for each alternative and each scenario. The resulting projected existing plus project peak hour traffic volumes for a typical weekday AM and PM peak hour are shown in Appendix C on Tables C-10 through C-17.

CUMULATIVE BASE (YEAR 2015) TRAFFIC PROJECTIONS

The cumulative base traffic projections reflect growth in traffic from two primary sources: background or ambient growth in the existing traffic volumes to reflect the effects of overall regional growth both in and outside of the study area, and traffic generated by specific related projects within, or in the vicinity of, the study area.

Areawide Traffic Growth

Traffic volumes in the vicinity of the study area are assumed to increase at a rate of 2% per year. This ambient growth rate is consistent with other studies conducted in this area of the City. Future increases in background traffic volumes due to regional growth and development are expected to continue at this rate, at least through the year 2015. With the project scheduled to be completed in 2015, the existing 2011 traffic volumes were grown by 8% to reflect areawide regional growth from 2011 to 2015.

Traffic Generation of Related Projects

Traffic expected to be generated by related projects within, or with the potential to affect, the study area was considered in addition to the ambient area wide traffic growth. For this study, related projects were identified by LADOT in July 2011. Directional splits were prepared for the related projects using standard trip generation rates from *Trip Generation, 8th Edition* (Institute of Transportation Engineers, 2003), relevant traffic studies and/or environmental impact reports for specific projects. The list of related projects included in this analysis, including trip generation estimates for each, is included in Table 5 and has been depicted in Figure 9.

Cumulative Development Project Traffic Distribution

The geographic distribution of traffic generated by developments, such as those included in the list of related projects, depends on several factors. These factors include the type and density of the proposed land use, the geographic distribution of the population from which employees and potential patrons of proposed commercial related projects may be drawn, the geographic distribution of employment and activity centers to which residents of proposed residential related projects may be drawn, the location of each related project in relation to the surrounding street system, and the extent of the roadway network (e.g., its continuity). Relevant traffic studies and/or environmental impact reports for specific projects, where available, were used to aid in determining related project trip distribution, and ultimately traffic assignment.

Cumulative Base Traffic Volumes

The future year 2015 cumulative base traffic volumes were developed using the trip generation estimates and trip distribution patterns described above. The resulting projected cumulative base peak hour traffic volumes for a typical weekday AM and PM peak hour are shown in Appendix C on Table C-18.

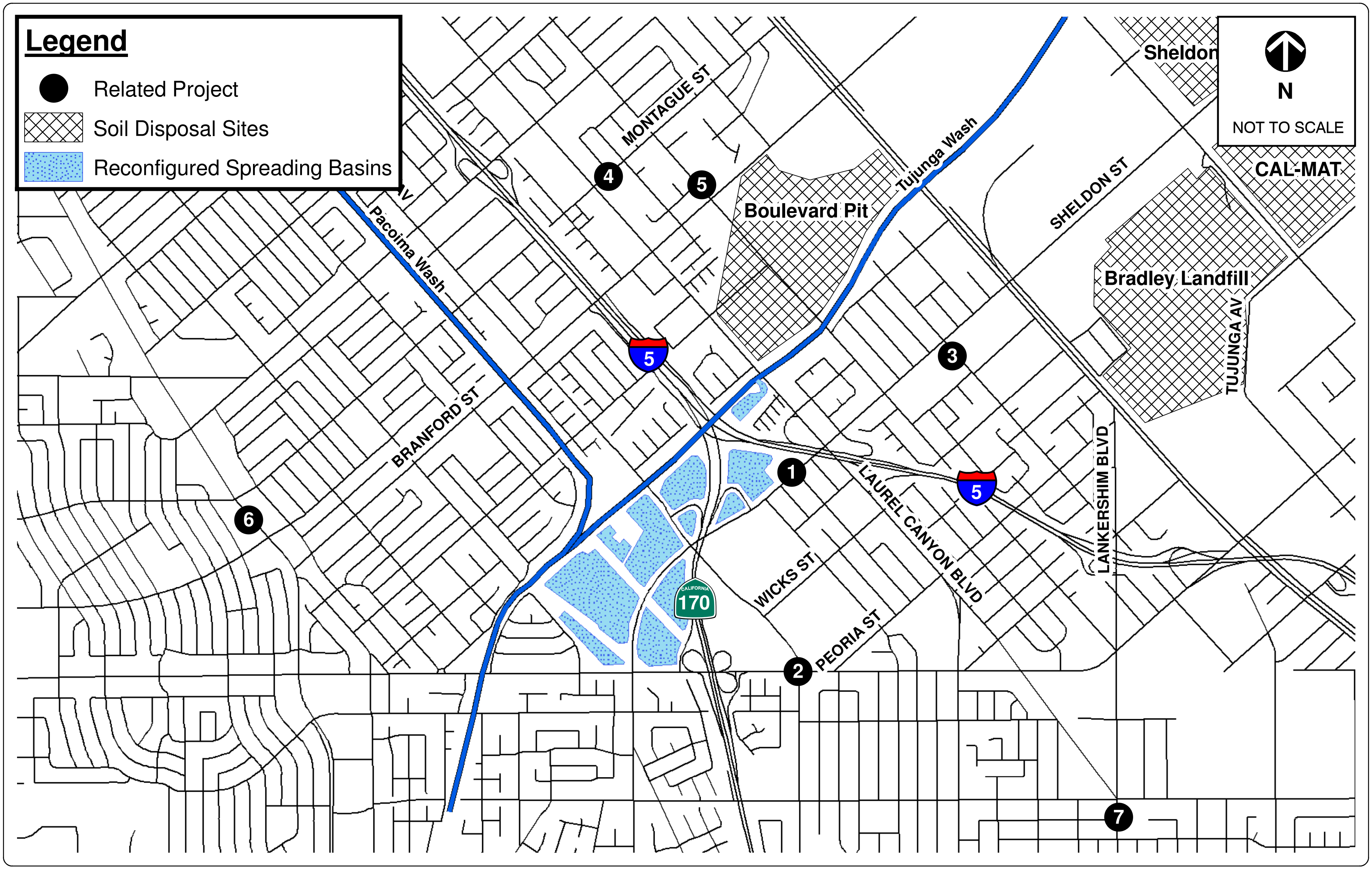
CUMULATIVE PLUS PROJECT (YEAR 2015) TRAFFIC PROJECTIONS

The temporary increase in traffic (as PCEs) that would occur during the project for each alternative and scenario were assigned to the street system and added to the cumulative base traffic projections. The resulting projected cumulative plus project peak hour traffic volumes for a typical weekday AM and PM peak hour are shown in Appendix C on Tables C-19 through C-26. They include the projected temporary excavation traffic and are the basis of the analysis of the project's traffic-related impacts described in the following chapter.

TABLE 5
RELATED PROJECTS TRIP GENERATION ESTIMATES

No.	Project Location	Land Use	Size		ITE Code	Trip Generation					
						AM			PM		
						In	Out	Total	In	Out	Total
1	12501 Sheldon Street	Multi-Family Residential	63	du	220	13	27	40	27	19	46
2	8401 Arleta Avenue	Middle School	1053	stu	[a]	253	232	485	126	147	273
3	9171 Telfair Avenue	High School	1620	stu	530	421	357	778	107	120	227
4	13000 Montague Street	Elementary School	400	stu	520	124	112	236	50	62	112
5	9582 Haddon Avenue	Condominiums	125	du	230	21	63	84	57	41	98
6	8755 Woodman Avenue	Middle School	480	stu	522	82	66	148	21	21	42
7	7934 Lankershim Boulevard	Shopping Center	60	ksf	820	74	74	148	138	138	276
					TOTAL	**988**	**931**	**1,919**	**526**	**548**	**1,074**

Notes:
du = dwelling units
ksf = one thousand square feet
stu = student
[a] Source: Memorandum of Coorporation between LAUSD and LADOT, June 24, 2005



FEHR & PEERS

LOCATION OF RELATED PROJECTS

FIGURE 9

4. TRAFFIC IMPACT ANALYSIS

The existing year 2011 plus project, projected year 2015 cumulative base and cumulative plus project traffic volume forecasts, as described in the previous chapter, were analyzed to determine the forecast baseline operating conditions of the study intersections and to identify the potential impacts of the proposed project on the surrounding street system. This chapter provides a discussion of the criteria and methodology used and summarizes the results of the analysis.

CRITERIA FOR DETERMINATION OF TEMPORARY ADVERSE TRAFFIC IMPACTS

Although the methodologies and the criteria to calculate volume over capacity (V/C) ratios for intersections are intended by LADOT to identify potential traffic impacts during operation, they can also be applied to construction periods. However, LADOT considers such impacts as adverse but not significant since, while they introduce inconvenience for vehicular traffic, those impacts are only temporary. Where determinations of adverse impacts are made, motorists would experience inconveniences that range in intensity from slight to substantial.

A temporary adverse impact would occur if the project would increase the V/C ratio of applicable intersections beyond the limits established by LADOT. A sliding scale has been established under which the maximum allowable increase in the V/C ratio decreases as the V/C ratio increases using the following scale:

Intersection Conditions with Project Traffic		Project-Related Increase in V/C Ratio
LOS	V/C Ratio	
C	0.701 - 0.800	Equal to or greater than 0.040
D	0.801 - 0.900	Equal to or greater than 0.020
E,F	> 0.901	Equal to or greater than 0.010

Using these criteria, a project would not have a temporary adverse impact at an analyzed intersection if it were operating at LOS A or B after the addition of project operational traffic. Also, a project would not have a temporary adverse impact on an analyzed intersection if it were operating at LOS C and the incremental change in the V/C ratio were less than 0.04, or if it were operating at LOS D and the incremental change in the V/C ratio were less than 0.02. If the intersection were operating at LOS E or F after the addition of project operational traffic and the incremental change in the V/C ratio were greater than or equal to 0.01, a project would be considered to have a temporary adverse impact.

EXISTING PLUS PROJECT OPERATING CONDITIONS

The existing plus project peak hour traffic volumes developed for each alternative were analyzed to project future operating conditions at the study intersections and to identify specific traffic impacts resulting from the addition of project-generated traffic during excavation. Future LOS calculations include the additional project-generated trips that would be necessary during the excavation period. The results of the intersection analysis are summarized in Tables 6 through 9 for the four alternatives and compared with the existing intersection operating conditions.

Alternative 1 – Boulevard Pit

Scenario 1

According to the City of Los Angeles' intersection traffic impact significance criteria, the proposed project would not result in any temporary adverse impacts at any of the 17 study intersections, as shown in Table 6.

Scenario 2

According to the City of Los Angeles' intersection traffic impact significance criteria, the proposed project would have a temporary adverse impact at the intersection of Arleta Avenue & Sheldon Street (Intersection 9) during both the AM an PM peak hours, as shown in Table 6. No impact would occur at the other 16 analyzed intersections.

Alternative 2 – Sheldon Pit

Scenario 1

According to the City of Los Angeles' intersection traffic impact significance criteria, the proposed project would not result in any temporary adverse impacts at any of the 17 study intersections, as shown in Table 7.

Scenario 2

According to the City of Los Angeles' intersection traffic impact significance criteria, the proposed project would have a temporary adverse impact at the intersection of Arleta Avenue & Sheldon Street (Intersection 9) during both the AM and PM peak hours, as shown in Table 7. No impact would occur at the other 16 analyzed intersections.

Alternative 3 – CAL-MAT

Scenario 1

According to the City of Los Angeles' intersection traffic impact significance criteria, the proposed project would not result in any temporary adverse impacts at any of the 17 study intersections, as shown in Table 8.

Scenario 2

According to the City of Los Angeles’ intersection traffic impact significance criteria, the proposed project would have a temporary adverse impact at the intersection of Arleta Avenue & Sheldon Street (Intersection 9) during both the AM an PM peak hours, as shown in Table 8.

Alternative 4 – Bradley Landfill

Scenario 1

According to the City of Los Angeles’ intersection traffic impact significance criteria, the proposed project would not result in any temporary adverse impacts at any of the 17 study intersections, as shown in Table 9.

Scenario 2

According to the City of Los Angeles’ intersection traffic impact significance criteria, the proposed project would have a temporary adverse impact at the intersection of Arleta Avenue & Sheldon Street (Intersection 9) during both the AM an PM peak hours, as shown in Table 9. No impact would occur at the other 16 analyzed intersections.

CUMULATIVE BASE (YEAR 2015) OPERATING CONDITIONS

The year 2015 cumulative base (without project) peak hour traffic volumes were analyzed using the LOS methodologies described in Chapter 2 to project future LOS at the study intersections during the AM and PM peak hours. The results of this analysis are summarized in Table 10 for the analyzed peak hours. The table provides a summary of the cumulative base scenario. Detailed LOS calculations are provided in Appendix C.

As shown in Table 10, three of the 17 study intersections are projected to operate at LOS D during the AM or PM peak hours, namely:

- 1. Sheldon Street & Roscoe Boulevard (LOS D in both AM and PM peak hours)
- 3. Arleta Avenue & Roscoe Boulevard (LOS D in the AM peak hour)
- 9. Arleta Avenue & Sheldon Street (LOS D in the PM peak hour)

TABLE 6
EXISTING (2011) PLUS PROJECT CONDITIONS
INTERSECTION LEVEL OF SERVICE WITH PCE
ALTERNATIVE 1

Intersections		Existing (2011)		Existing (2011) Plus Project Alternative 1 Scenario 1				Existing (2011) Plus Project Alternative 1 Scenario 2			
	Peak Hour	V/C or Delay	LOS	V/C or Delay	LOS	Project Change	Significant Impact Project?	V/C or Delay	LOS	Project Change	Significant Impact Project?
1. Sheldon Street	AM	0.747	C	0.747	C	0.000	NO	0.747	C	0.000	NO
& Roscoe Boulevard	PM	0.751	C	0.776	C	0.025	NO	0.764	C	0.013	NO
2. SR-170 SB Off-Ramp	AM	0.497	A	0.509	A	0.012	NO	0.509	A	0.012	NO
& Roscoe Boulevard	PM	0.394	A	0.401	A	0.007	NO	0.397	A	0.003	NO
3. Arleta Avenue	AM	0.677	B	0.677	B	0.000	NO	0.677	B	0.000	NO
& Roscoe Boulevard	PM	0.622	B	0.622	B	0.000	NO	0.622	B	0.000	NO
4. Laurel Canyon Boulevard	AM	0.653	B	0.653	B	0.000	NO	0.653	B	0.000	NO
& Roscoe Boulevard	PM	0.626	B	0.626	B	0.000	NO	0.626	B	0.000	NO
5. Lankershim Boulevard	AM	0.608	B	0.608	B	0.000	NO	0.608	B	0.000	NO
& Roscoe Boulevard	PM	0.648	B	0.648	B	0.000	NO	0.648	B	0.000	NO
6. San Fernando Road	AM	0.604	B	0.604	B	0.000	NO	0.604	B	0.000	NO
& Tuxford Street	PM	0.627	B	0.627	B	0.000	NO	0.627	B	0.000	NO
7. Bradley Avenue	AM	0.328	A	0.328	A	0.000	NO	0.328	A	0.000	NO
& Tuxford Street	PM	0.361	A	0.361	A	0.000	NO	0.361	A	0.000	NO
8. Glenoaks Boulevard	AM	0.349	A	0.349	A	0.000	NO	0.349	A	0.000	NO
& Peoria Street	PM	0.368	A	0.368	A	0.000	NO	0.368	A	0.000	NO
9. Arleta Avenue	AM	0.659	B	0.699	B	0.040	NO	0.708	C	0.049	YES
& Sheldon Street	PM	0.774	C	0.797	C	0.023	NO	0.803	D	0.029	YES
10. SR-170 NB Off-Ramp	AM	0.294	A	0.311	A	0.017	NO	0.317	A	0.023	NO
& Sheldon Street	PM	0.310	A	0.316	A	0.006	NO	0.316	A	0.006	NO
11. Laurel Canyon Boulevard	AM	0.666	B	0.673	B	0.007	NO	0.673	B	0.007	NO
& Sheldon Street	PM	0.653	B	0.659	B	0.006	NO	0.659	B	0.006	NO
12. San Fernando Road	AM	0.579	A	0.591	A	0.012	NO	0.591	A	0.012	NO
& Sheldon Street	PM	0.652	B	0.652	B	0.000	NO	0.652	B	0.000	NO
13. Glenoaks Boulevard	AM	0.595	A	0.595	A	0.000	NO	0.595	A	0.000	NO
& Sheldon Street	PM	0.571	A	0.571	A	0.000	NO	0.571	A	0.000	NO
14. Arleta Ave	AM	0.631	B	0.631	B	0.000	NO	0.631	B	0.000	NO
& Branford Street	PM	0.685	B	0.685	B	0.000	NO	0.685	B	0.000	NO
15. Laruel Canyon Boulevard	AM	0.613	B	0.623	B	0.010	NO	0.623	B	0.010	NO
& Branford Street	PM	0.685	B	0.685	B	0.000	NO	0.685	B	0.000	NO
16. San Fernando Road	AM	0.530	A	0.530	A	0.000	NO	0.530	A	0.000	NO
& Branford Street	PM	0.571	A	0.571	A	0.000	NO	0.571	A	0.000	NO
17. Glenoaks Boulevard	AM	0.489	A	0.489	A	0.000	NO	0.489	A	0.000	NO
& Branford Street	PM	0.509	A	0.509	A	0.000	NO	0.509	A	0.000	NO

TABLE 7
EXISTING (2011) PLUS PROJECT CONDITIONS
INTERSECTION LEVEL OF SERVICE WITH PCE
ALTERNATIVE 2

Intersections	Peak Hour	Existing (2011)		Existing (2011) Plus Project Alternative 2 Scenario 1				Existing (2011) Plus Project Alternative 2 Scenario 2			
		V/C or Delay	LOS	V/C or Delay	LOS	Project Change	Significant Impact Project?	V/C or Delay	LOS	Project Change	Significant Impact Project?
1. Sheldon Street & Roscoe Boulevard	AM PM	0.747 0.751	C C	0.747 0.776	C C	0.000 0.025	NO NO	0.747 0.764	C C	0.000 0.013	NO NO
2. SR-170 SB Off-Ramp & Roscoe Boulevard	AM PM	0.497 0.394	A A	0.509 0.410	A A	0.012 0.016	NO NO	0.509 0.397	A A	0.012 0.003	NO NO
3. Arleta Avenue & Roscoe Boulevard	AM PM	0.677 0.622	B B	0.677 0.622	B B	0.000 0.000	NO NO	0.677 0.622	B B	0.000 0.000	NO NO
4. Laurel Canyon Boulevard & Roscoe Boulevard	AM PM	0.653 0.626	B B	0.653 0.626	B B	0.000 0.000	NO NO	0.653 0.626	B B	0.000 0.000	NO NO
5. Lankershim Boulevard & Roscoe Boulevard	AM PM	0.608 0.648	B B	0.608 0.648	B B	0.000 0.000	NO NO	0.608 0.648	B B	0.000 0.000	NO NO
6. San Fernando Road & Tuxford Street	AM PM	0.604 0.627	B B	0.604 0.627	B B	0.000 0.000	NO NO	0.604 0.627	B B	0.000 0.000	NO NO
7. Bradley Avenue & Tuxford Street	AM PM	0.328 0.361	A A	0.328 0.361	A A	0.000 0.000	NO NO	0.328 0.361	A A	0.000 0.000	NO NO
8. Glenoaks Boulevard & Peoria Street	AM PM	0.349 0.368	A A	0.349 0.368	A A	0.000 0.000	NO NO	0.349 0.368	A A	0.000 0.000	NO NO
9. Arleta Avenue & Sheldon Street	AM PM	0.659 0.774	B C	0.676 0.774	B C	0.017 0.000	NO NO	0.708 0.814	C D	0.049 0.040	YES YES
10. SR-170 NB Off-Ramp & Sheldon Street	AM PM	0.294 0.310	A A	0.311 0.321	A A	0.017 0.011	NO NO	0.317 0.327	A A	0.023 0.017	NO NO
11. Laurel Canyon Boulevard & Sheldon Street	AM PM	0.666 0.653	B B	0.684 0.664	B B	0.018 0.011	NO NO	0.684 0.671	B B	0.018 0.018	NO NO
12. San Fernando Road & Sheldon Street	AM PM	0.579 0.652	A B	0.591 0.664	A B	0.012 0.012	NO NO	0.591 0.664	A B	0.012 0.012	NO NO
13. Glenoaks Boulevard & Sheldon Street	AM PM	0.595 0.571	A A	0.605 0.581	B A	0.010 0.010	NO NO	0.605 0.581	B A	0.010 0.010	NO NO
14. Arleta Ave & Branford Street	AM PM	0.631 0.685	B B	0.631 0.685	B B	0.000 0.000	NO NO	0.631 0.685	B B	0.000 0.000	NO NO
15. Laruel Canyon Boulevard & Branford Street	AM PM	0.613 0.685	B B	0.613 0.685	B B	0.000 0.000	NO NO	0.613 0.685	B B	0.000 0.000	NO NO
16. San Fernando Road & Branford Street	AM PM	0.530 0.571	A A	0.530 0.571	A A	0.000 0.000	NO NO	0.530 0.571	A A	0.000 0.000	NO NO
17. Glenoaks Boulevard & Branford Street	AM PM	0.489 0.509	A A	0.489 0.509	A A	0.000 0.000	NO NO	0.489 0.509	A A	0.000 0.000	NO NO

TABLE 8
EXISTING (2011) PLUS PROJECT CONDITIONS INTERSECTION LEVEL OF SERVICE WITH PCE
ALTERNATIVE 3

Intersections	Peak Hour	Existing (2011)		Existing (2011) Plus Project Alternative 3 Scenario 1				Existing (2011) Plus Project Alternative 3 Scenario 2			
		V/C or Delay	LOS	V/C or Delay	LOS	Project Change	Significant Impact Project?	V/C or Delay	LOS	Project Change	Significant Impact Project?
1. Sheldon Street & Roscoe Boulevard	AM	0.747	C	0.747	C	0.000	NO	0.747	C	0.000	NO
	PM	0.751	C	0.776	C	0.025	NO	0.764	C	0.013	NO
2. SR-170 SB Off-Ramp & Roscoe Boulevard	AM	0.497	A	0.509	A	0.012	NO	0.509	A	0.012	NO
	PM	0.394	A	0.401	A	0.007	NO	0.397	A	0.003	NO
3. Arleta Avenue & Roscoe Boulevard	AM	0.677	B	0.677	B	0.000	NO	0.677	B	0.000	NO
	PM	0.622	B	0.622	B	0.000	NO	0.622	B	0.000	NO
4. Laurel Canyon Boulevard & Roscoe Boulevard	AM	0.653	B	0.653	B	0.000	NO	0.653	B	0.000	NO
	PM	0.626	B	0.626	B	0.000	NO	0.626	B	0.000	NO
5. Lankershim Boulevard & Roscoe Boulevard	AM	0.608	B	0.608	B	0.000	NO	0.608	B	0.000	NO
	PM	0.648	B	0.648	B	0.000	NO	0.648	B	0.000	NO
6. San Fernando Road & Tuxford Street	AM	0.604	B	0.604	B	0.000	NO	0.604	B	0.000	NO
	PM	0.627	B	0.627	B	0.000	NO	0.627	B	0.000	NO
7. Bradley Avenue & Tuxford Street	AM	0.328	A	0.328	A	0.000	NO	0.328	A	0.000	NO
	PM	0.361	A	0.361	A	0.000	NO	0.361	A	0.000	NO
8. Glenoaks Boulevard & Peoria Street	AM	0.349	A	0.349	A	0.000	NO	0.349	A	0.000	NO
	PM	0.368	A	0.368	A	0.000	NO	0.368	A	0.000	NO
9. Arleta Avenue & Sheldon Street	AM	0.659	B	0.676	B	0.017	NO	0.708	C	0.049	YES
	PM	0.774	C	0.774	C	0.000	NO	0.814	D	0.040	YES
10. SR-170 NB Off-Ramp & Sheldon Street	AM	0.294	A	0.311	A	0.017	NO	0.317	A	0.023	NO
	PM	0.310	A	0.321	A	0.011	NO	0.327	A	0.017	NO
11. Laurel Canyon Boulevard & Sheldon Street	AM	0.666	B	0.684	B	0.018	NO	0.684	B	0.018	NO
	PM	0.653	B	0.664	B	0.011	NO	0.671	B	0.018	NO
12. San Fernando Road & Sheldon Street	AM	0.579	A	0.591	A	0.012	NO	0.591	A	0.012	NO
	PM	0.652	B	0.664	B	0.012	NO	0.664	B	0.012	NO
13. Glenoaks Boulevard & Sheldon Street	AM	0.595	A	0.616	B	0.021	NO	0.616	B	0.021	NO
	PM	0.571	A	0.571	A	0.000	NO	0.571	A	0.000	NO
14. Arleta Ave & Branford Street	AM	0.631	B	0.631	B	0.000	NO	0.631	B	0.000	NO
	PM	0.685	B	0.685	B	0.000	NO	0.685	B	0.000	NO
15. Laruel Canyon Boulevard & Branford Street	AM	0.613	B	0.613	B	0.000	NO	0.613	B	0.000	NO
	PM	0.685	B	0.685	B	0.000	NO	0.685	B	0.000	NO
16. San Fernando Road & Branford Street	AM	0.530	A	0.530	A	0.000	NO	0.530	A	0.000	NO
	PM	0.571	A	0.571	A	0.000	NO	0.571	A	0.000	NO
17. Glenoaks Boulevard & Branford Street	AM	0.489	A	0.489	A	0.000	NO	0.489	A	0.000	NO
	PM	0.509	A	0.509	A	0.000	NO	0.509	A	0.000	NO

TABLE 9
EXISTING (2011) PLUS PROJECT CONDITIONS
INTERSECTION LEVEL OF SERVICE WITH PCE
ALTERNATIVE 4

Intersections	Peak Hour	Existing (2011)		Existing (2011) Plus Project Alternative 4 Scenario 1				Existing (2011) Plus Project Alternative 4 Scenario 2			
		V/C or Delay	LOS	V/C or Delay	LOS	Project Change	Significant Impact Project?	V/C or Delay	LOS	Project Change	Significant Impact Project?
1. Sheldon Street & Roscoe Boulevard	AM PM	0.747 0.751	C C	0.747 0.784	C C	0.000 0.033	NO NO	0.747 0.772	C C	0.000 0.021	NO NO
2. SR-170 SB Off-Ramp & Roscoe Boulevard	AM PM	0.497 0.394	A A	0.509 0.401	A A	0.012 0.007	NO NO	0.509 0.401	A A	0.012 0.007	NO NO
3. Arleta Avenue & Roscoe Boulevard	AM PM	0.677 0.622	B B	0.688 0.634	B B	0.011 0.012	NO NO	0.688 0.634	B B	0.011 0.012	NO NO
4. Laurel Canyon Boulevard & Roscoe Boulevard	AM PM	0.653 0.626	B B	0.653 0.637	B B	0.000 0.011	NO NO	0.653 0.637	B B	0.000 0.011	NO NO
5. Lankershim Boulevard & Roscoe Boulevard	AM PM	0.608 0.648	B B	0.620 0.659	B B	0.012 0.011	NO NO	0.620 0.659	B B	0.012 0.011	NO NO
6. San Fernando Road & Tuxford Street	AM PM	0.604 0.627	B B	0.616 0.638	B B	0.012 0.011	NO NO	0.616 0.638	B B	0.012 0.011	NO NO
7. Bradley Avenue & Tuxford Street	AM PM	0.328 0.361	A A	0.328 0.382	A A	0.000 0.021	NO NO	0.328 0.382	A A	0.000 0.021	NO NO
8. Glenoaks Boulevard & Peoria Street	AM PM	0.349 0.368	A A	0.360 0.368	A A	0.011 0.000	NO NO	0.360 0.368	A A	0.011 0.000	NO NO
9. Arleta Avenue & Sheldon Street	AM PM	0.659 0.774	B C	0.665 0.774	B C	0.006 0.000	NO NO	0.719 0.814	C D	0.060 0.040	YES YES
10. SR-170 NB Off-Ramp & Sheldon Street	AM PM	0.294 0.310	A A	0.300 0.327	A A	0.006 0.017	NO NO	0.306 0.327	A A	0.012 0.017	NO NO
11. Laurel Canyon Boulevard & Sheldon Street	AM PM	0.666 0.653	B B	0.684 0.671	B B	0.018 0.018	NO NO	0.684 0.671	B B	0.018 0.018	NO NO
12. San Fernando Road & Sheldon Street	AM PM	0.579 0.652	A B	0.591 0.664	A B	0.012 0.012	NO NO	0.591 0.664	A B	0.012 0.012	NO NO
13. Glenoaks Boulevard & Sheldon Street	AM PM	0.595 0.571	A A	0.595 0.571	A A	0.000 0.000	NO NO	0.595 0.571	A A	0.000 0.000	NO NO
14. Arleta Ave & Branford Street	AM PM	0.631 0.685	B B	0.631 0.685	B B	0.000 0.000	NO NO	0.631 0.685	B B	0.000 0.000	NO NO
15. Laruel Canyon Boulevard & Branford Street	AM PM	0.613 0.685	B B	0.613 0.685	B B	0.000 0.000	NO NO	0.613 0.685	B B	0.000 0.000	NO NO
16. San Fernando Road & Branford Street	AM PM	0.530 0.571	A A	0.530 0.571	A A	0.000 0.000	NO NO	0.530 0.571	A A	0.000 0.000	NO NO
17. Glenoaks Boulevard & Branford Street	AM PM	0.489 0.509	A A	0.489 0.509	A A	0.000 0.000	NO NO	0.489 0.509	A A	0.000 0.000	NO NO

TABLE 10
CUMULATIVE BASE (2015) INTERSECTION LEVEL OF SERVICE ANALYSIS WITH PCE

Intersections	Peak Hour	Cumulatvie Base	
		V/C or Delay	LOS
1. Sheldon Street & Roscoe Boulevard	AM PM	0.831 0.835	D D
2. SR-170 SB Off-Ramp & Roscoe Boulevard	AM PM	0.558 0.442	A A
3. Arleta Avenue & Roscoe Boulevard	AM PM	0.878 0.733	D C
4. Laurel Canyon Boulevard & Roscoe Boulevard	AM PM	0.740 0.701	C C
5. Lankershim Boulevard & Roscoe Boulevard	AM PM	0.703 0.740	C C
6. San Fernando Road & Tuxford Street	AM PM	0.678 0.696	B B
7. Bradley Avenue & Tuxford Street	AM PM	0.377 0.406	A A
8. Glenoaks Boulevard & Peoria Street	AM PM	0.385 0.405	A A
9. Arleta Avenue & Sheldon Street	AM PM	0.732 0.851	C D
10. SR-170 NB Off-Ramp & Sheldon Street	AM PM	0.338 0.350	A A
11. Laurel Canyon Boulevard & Sheldon Street	AM PM	0.759 0.742	C C
12. San Fernando Road & Sheldon Street	AM PM	0.640 0.715	B C
13. Glenoaks Boulevard & Sheldon Street	AM PM	0.654 0.627	B B
14. Arleta Ave & Branford Street	AM PM	0.712 0.766	C C
15. Laruel Canyon Boulevard & Branford Street	AM PM	0.694 0.783	B C
16. San Fernando Road & Branford Street	AM PM	0.587 0.627	A B
17. Glenoaks Boulevard & Branford Street	AM PM	0.539 0.557	A A

CUMULATIVE PLUS PROJECT (YEAR 2015) TRAFFIC OPERATING CONDITIONS

The year 2015 cumulative plus project peak hour traffic volumes developed for each alternative were analyzed to project future operating conditions at the study intersections and to identify specific traffic impacts resulting from the addition of project-generated traffic during excavation. Future LOS calculations include the additional project-generated trips that would be necessary during the excavation period. The results of the intersection analysis are summarized in tables 11 through 14 and compared against the cumulative base intersection conditions to determine project impacts.

Alternative 1 – Boulevard Pit

Scenario 1

According to the City of Los Angeles' intersection traffic impact significance criteria, the proposed project would have a temporary adverse impact at the following intersections, as can be seen on Table 11:

- 1. Sheldon Street & Roscoe Boulevard (LOS D in the PM)
- 9. Arleta Avenue & Sheldon Street (LOS D in the PM)

Scenario 2

According to the City of Los Angeles' intersection traffic impact significance criteria, the proposed project would have a temporary adverse impact at the following intersection, as can be seen on Table 11:

- 9. Arleta Avenue & Sheldon Street (LOS C in the AM and LOS D in the PM)

Alternative 2 – Sheldon Pit

Scenario 1

According to the City of Los Angeles' intersection traffic impact significance criteria, the proposed project would have a temporary adverse impact at the following intersection, as can be seen on Table 12:

- 1. Sheldon Street & Roscoe Boulevard (LOS D in the PM)

Scenario 2

According to the City of Los Angeles' intersection traffic impact significance criteria, the proposed project would have a temporary adverse impact at the following intersection, as can be seen on Table 11:

- 9. Arleta Avenue & Sheldon Street (LOS C in the AM and LOS D in the PM)

Alternative 3 – CAL-MAT

Scenario 1

According to the City of Los Angeles' intersection traffic impact significance criteria, the proposed project would have a temporary adverse impact at the following intersection, as can be seen on Table 12:

- 1. Sheldon Street & Roscoe Boulevard (LOS D in the PM)

Scenario 2

According to the City of Los Angeles' intersection traffic impact significance criteria, the proposed project would have a temporary adverse impact at the following intersection, as can be seen on Table 11:

- 9. Arleta Avenue & Sheldon Street (LOS C in the AM and LOS D in the PM)

Alternative 4 – Bradley Landfill

Scenario 1

According to the City of Los Angeles' intersection traffic impact significance criteria, the proposed project would have a temporary adverse impact at the following intersection, as can be seen on Table 12:

- 1. Sheldon Street & Roscoe Boulevard (LOS D in the PM)

Scenario 2

According to the City of Los Angeles' intersection traffic impact significance criteria, the proposed project would have a temporary adverse impact at the following intersections, as can be seen on Table 11:

- 1. Sheldon Street & Roscoe Boulevard (LOS D in the PM)
- 9. Arleta Avenue & Sheldon Street (LOS C in the AM and LOS D in the PM)

TABLE 11
CUMULATIVE (2015) PLUS PROJECT CONDITIONS
INTERSECTION LEVEL OF SERVICE WITH PCE
ALTERNATIVE 1

Intersections	Peak Hour	Cumulative Base (2015)		Cumulative (2015) Plus Project Alternative 1 Scenario 1				Cumulative (2015) Plus Project Alternative 1 Scenario 2			
		V/C or Delay	LOS	V/C or Delay	LOS	Project Change	Significant Impact?	V/C or Delay	LOS	Project Change	Significant Impact?
1. Sheldon Street & Roscoe Boulevard	AM PM	0.831 0.835	D D	0.831 0.860	D D	0.000 0.025	NO YES	0.831 0.847	D D	0.000 0.013	NO NO
2. SR-170 SB Off-Ramp & Roscoe Boulevard	AM PM	0.558 0.442	A A	0.570 0.449	A A	0.012 0.007	NO NO	0.570 0.445	A A	0.012 0.003	NO NO
3. Arleta Avenue & Roscoe Boulevard	AM PM	0.878 0.733	D C	0.878 0.733	D C	0.000 0.000	NO NO	0.878 0.733	D C	0.000 0.000	NO NO
4. Laurel Canyon Boulevard & Roscoe Boulevard	AM PM	0.740 0.701	C C	0.740 0.701	C C	0.000 0.000	NO NO	0.740 0.701	C C	0.000 0.000	NO NO
5. Lankershim Boulevard & Roscoe Boulevard	AM PM	0.703 0.740	C C	0.703 0.740	C C	0.000 0.000	NO NO	0.703 0.740	C C	0.000 0.000	NO NO
6. San Fernando Road & Tuxford Street	AM PM	0.678 0.696	B B	0.678 0.696	B B	0.000 0.000	NO NO	0.678 0.696	B B	0.000 0.000	NO NO
7. Bradley Avenue & Tuxford Street	AM PM	0.377 0.406	A A	0.377 0.406	A A	0.000 0.000	NO NO	0.377 0.406	A A	0.000 0.000	NO NO
8. Glenoaks Boulevard & Peoria Street	AM PM	0.385 0.405	A A	0.385 0.405	A A	0.000 0.000	NO NO	0.385 0.405	A A	0.000 0.000	NO NO
9. Arleta Avenue & Sheldon Street	AM PM	0.732 0.851	C D	0.772 0.873	C D	0.040 0.022	NO YES	0.781 0.880	C D	0.049 0.029	YES YES
10. SR-170 NB Off-Ramp & Sheldon Street	AM PM	0.338 0.350	A A	0.355 0.356	A A	0.017 0.006	NO NO	0.361 0.356	A A	0.023 0.006	NO NO
11. Laurel Canyon Boulevard & Sheldon Street	AM PM	0.759 0.742	C C	0.765 0.748	C C	0.006 0.006	NO NO	0.765 0.748	C C	0.006 0.006	NO NO
12. San Fernando Road & Sheldon Street	AM PM	0.640 0.715	B C	0.652 0.715	B C	0.012 0.000	NO NO	0.652 0.715	B C	0.012 0.000	NO NO
13. Glenoaks Boulevard & Sheldon Street	AM PM	0.654 0.627	B B	0.654 0.627	B B	0.000 0.000	NO NO	0.654 0.627	B B	0.000 0.000	NO NO
14. Arleta Ave & Branford Street	AM PM	0.712 0.766	C C	0.712 0.766	C C	0.000 0.000	NO NO	0.712 0.766	C C	0.000 0.000	NO NO
15. Laruel Canyon Boulevard & Branford Street	AM PM	0.694 0.783	B C	0.705 0.783	C C	0.011 0.000	NO NO	0.705 0.783	C C	0.011 0.000	NO NO
16. San Fernando Road & Branford Street	AM PM	0.587 0.627	A B	0.587 0.627	A B	0.000 0.000	NO NO	0.587 0.627	A B	0.000 0.000	NO NO
17. Glenoaks Boulevard & Branford Street	AM PM	0.539 0.557	A A	0.539 0.557	A A	0.000 0.000	NO NO	0.539 0.557	A A	0.000 0.000	NO NO

TABLE 12
CUMULATIVE (2015) PLUS PROJECT CONDITIONS
INTERSECTION LEVEL OF SERVICE WITH PCE
ALTERNATIVE 2

Intersections	Peak Hour	Cumulative Base (2015)		Cumulative (2015) Plus Project Alternative 2 Scenario 1				Cumulative (2015) Plus Project Alternative 2 Scenario 2			
		V/C or Delay	LOS	V/C or Delay	LOS	Project Change	Significant Impact?	V/C or Delay	LOS	Project Change	Significant Impact?
1. Sheldon Street & Roscoe Boulevard	AM PM	0.831 0.835	D D	0.831 0.860	D D	0.000 0.025	NO YES	0.831 0.847	D D	0.000 0.013	NO NO
2. SR-170 SB Off-Ramp & Roscoe Boulevard	AM PM	0.558 0.442	A A	0.570 0.449	A A	0.012 0.007	NO NO	0.570 0.445	A A	0.012 0.003	NO NO
3. Arleta Avenue & Roscoe Boulevard	AM PM	0.878 0.733	D C	0.878 0.733	D C	0.000 0.000	NO NO	0.878 0.733	D C	0.000 0.000	NO NO
4. Laurel Canyon Boulevard & Roscoe Boulevard	AM PM	0.740 0.701	C C	0.740 0.701	C C	0.000 0.000	NO NO	0.740 0.701	C C	0.000 0.000	NO NO
5. Lankershim Boulevard & Roscoe Boulevard	AM PM	0.703 0.740	C C	0.703 0.740	C C	0.000 0.000	NO NO	0.703 0.740	C C	0.000 0.000	NO NO
6. San Fernando Road & Tuxford Street	AM PM	0.678 0.696	B B	0.678 0.696	B B	0.000 0.000	NO NO	0.678 0.696	B B	0.000 0.000	NO NO
7. Bradley Avenue & Tuxford Street	AM PM	0.377 0.406	A A	0.377 0.406	A A	0.000 0.000	NO NO	0.377 0.406	A A	0.000 0.000	NO NO
8. Glenoaks Boulevard & Peoria Street	AM PM	0.385 0.405	A A	0.385 0.405	A A	0.000 0.000	NO NO	0.385 0.405	A A	0.000 0.000	NO NO
9. Arleta Avenue & Sheldon Street	AM PM	0.732 0.851	C D	0.749 0.851	C D	0.018 0.000	NO NO	0.781 0.891	C D	0.049 0.040	YES YES
10. SR-170 NB Off-Ramp & Sheldon Street	AM PM	0.338 0.350	A A	0.355 0.367	A A	0.017 0.017	NO NO	0.361 0.367	A A	0.023 0.017	NO NO
11. Laurel Canyon Boulevard & Sheldon Street	AM PM	0.759 0.742	C C	0.776 0.760	C C	0.018 0.018	NO NO	0.776 0.760	C C	0.018 0.018	NO NO
12. San Fernando Road & Sheldon Street	AM PM	0.640 0.715	B C	0.652 0.726	B C	0.012 0.012	NO NO	0.652 0.726	B C	0.012 0.012	NO NO
13. Glenoaks Boulevard & Sheldon Street	AM PM	0.654 0.627	B B	0.665 0.638	B B	0.011 0.011	NO NO	0.665 0.638	B B	0.011 0.011	NO NO
14. Arleta Ave & Branford Street	AM PM	0.712 0.766	C C	0.712 0.766	C C	0.000 0.000	NO NO	0.712 0.766	C C	0.000 0.000	NO NO
15. Laruel Canyon Boulevard & Branford Street	AM PM	0.694 0.783	B C	0.694 0.783	B C	0.000 0.000	NO NO	0.694 0.783	B C	0.000 0.000	NO NO
16. San Fernando Road & Branford Street	AM PM	0.587 0.627	A B	0.587 0.627	A B	0.000 0.000	NO NO	0.587 0.627	A B	0.000 0.000	NO NO
17. Glenoaks Boulevard & Branford Street	AM PM	0.539 0.557	A A	0.539 0.557	A A	0.000 0.000	NO NO	0.539 0.557	A A	0.000 0.000	NO NO

TABLE 13
CUMULATIVE (2015) PLUS PROJECT CONDITIONS
INTERSECTION LEVEL OF SERVICE WITH PCE
ALTERNATIVE 3

Intersections	Peak Hour	Cumulative Base (2015)		Cumulative (2015) Plus Project Alternative 3 Scenario 1				Cumulative (2015) Plus Project Alternative 3 Scenario 2			
		V/C or Delay	LOS	V/C or Delay	LOS	Project Change	Significant Impact?	V/C or Delay	LOS	Project Change	Significant Impact?
1. Sheldon Street & Roscoe Boulevard	AM PM	0.831 0.835	D D	0.831 0.860	D D	0.000 0.025	NO YES	0.831 0.847	D D	0.000 0.013	NO NO
2. SR-170 SB Off-Ramp & Roscoe Boulevard	AM PM	0.558 0.442	A A	0.570 0.449	A A	0.012 0.007	NO NO	0.570 0.445	A A	0.012 0.003	NO NO
3. Arleta Avenue & Roscoe Boulevard	AM PM	0.878 0.733	D C	0.878 0.733	D C	0.000 0.000	NO NO	0.878 0.733	D C	0.000 0.000	NO NO
4. Laurel Canyon Boulevard & Roscoe Boulevard	AM PM	0.740 0.701	C C	0.740 0.701	C C	0.000 0.000	NO NO	0.740 0.701	C C	0.000 0.000	NO NO
5. Lankershim Boulevard & Roscoe Boulevard	AM PM	0.703 0.740	C C	0.703 0.740	C C	0.000 0.000	NO NO	0.703 0.740	C C	0.000 0.000	NO NO
6. San Fernando Road & Tuxford Street	AM PM	0.678 0.696	B B	0.678 0.696	B B	0.000 0.000	NO NO	0.678 0.696	B B	0.000 0.000	NO NO
7. Bradley Avenue & Tuxford Street	AM PM	0.377 0.406	A A	0.377 0.406	A A	0.000 0.000	NO NO	0.377 0.406	A A	0.000 0.000	NO NO
8. Glenoaks Boulevard & Peoria Street	AM PM	0.385 0.405	A A	0.385 0.405	A A	0.000 0.000	NO NO	0.385 0.405	A A	0.000 0.000	NO NO
9. Arleta Avenue & Sheldon Street	AM PM	0.732 0.851	C D	0.749 0.851	C D	0.018 0.000	NO NO	0.781 0.891	C D	0.049 0.040	YES YES
10. SR-170 NB Off-Ramp & Sheldon Street	AM PM	0.338 0.350	A A	0.355 0.367	A A	0.017 0.017	NO NO	0.361 0.367	A A	0.023 0.017	NO NO
11. Laurel Canyon Boulevard & Sheldon Street	AM PM	0.759 0.742	C C	0.776 0.760	C C	0.018 0.018	NO NO	0.776 0.760	C C	0.018 0.018	NO NO
12. San Fernando Road & Sheldon Street	AM PM	0.640 0.715	B C	0.652 0.726	B C	0.012 0.012	NO NO	0.652 0.726	B C	0.012 0.012	NO NO
13. Glenoaks Boulevard & Sheldon Street	AM PM	0.654 0.627	B B	0.675 0.627	B B	0.021 0.000	NO NO	0.675 0.627	B B	0.021 0.000	NO NO
14. Arleta Ave & Branford Street	AM PM	0.712 0.766	C C	0.712 0.766	C C	0.000 0.000	NO NO	0.712 0.766	C C	0.000 0.000	NO NO
15. Laruel Canyon Boulevard & Branford Street	AM PM	0.694 0.783	B C	0.694 0.783	B C	0.000 0.000	NO NO	0.694 0.783	B C	0.000 0.000	NO NO
16. San Fernando Road & Branford Street	AM PM	0.587 0.627	A B	0.587 0.627	A B	0.000 0.000	NO NO	0.587 0.627	A B	0.000 0.000	NO NO
17. Glenoaks Boulevard & Branford Street	AM PM	0.539 0.557	A A	0.539 0.557	A A	0.000 0.000	NO NO	0.539 0.557	A A	0.000 0.000	NO NO

TABLE 14
CUMULATIVE (2015) PLUS PROJECT CONDITIONS INTERSECTION LEVEL OF SERVICE WITH PCE ALTERNATIVE 4

Intersections		Cumulative Base (2015)		Cumulative (2015) Plus Project Alternative 4 Scenario 1				Cumulative (2015) Plus Project Alternative 4 Scenario 2			
	Peak Hour	V/C or Delay	LOS	V/C or Delay	LOS	Project Change	Significant Impact?	V/C or Delay	LOS	Project Change	Significant Impact?
1. Sheldon Street & Roscoe Boulevard	AM PM	0.831 0.835	D D	0.831 0.868	D D	0.000 0.033	NO YES	0.831 0.855	D D	0.000 0.020	NO YES
2. SR-170 SB Off-Ramp & Roscoe Boulevard	AM PM	0.558 0.442	A A	0.570 0.449	A A	0.012 0.007	NO NO	0.570 0.449	A A	0.012 0.007	NO NO
3. Arleta Avenue & Roscoe Boulevard	AM PM	0.878 0.733	D C	0.890 0.744	D C	0.012 0.012	NO NO	0.890 0.744	D C	0.012 0.012	NO NO
4. Laurel Canyon Boulevard & Roscoe Boulevard	AM PM	0.740 0.701	C C	0.740 0.713	C C	0.000 0.012	NO NO	0.740 0.713	C C	0.000 0.012	NO NO
5. Lankershim Boulevard & Roscoe Boulevard	AM PM	0.703 0.740	C C	0.715 0.744	C C	0.012 0.004	NO NO	0.715 0.744	C C	0.012 0.004	NO NO
6. San Fernando Road & Tuxford Street	AM PM	0.678 0.696	B B	0.690 0.707	B C	0.012 0.012	NO NO	0.690 0.707	B C	0.012 0.012	NO NO
7. Bradley Avenue & Tuxford Street	AM PM	0.377 0.406	A A	0.377 0.427	A A	0.000 0.021	NO NO	0.377 0.427	A A	0.000 0.021	NO NO
8. Glenoaks Boulevard & Peoria Street	AM PM	0.385 0.405	A A	0.396 0.405	A A	0.011 0.000	NO NO	0.396 0.405	A A	0.011 0.000	NO NO
9. Arleta Avenue & Sheldon Street	AM PM	0.732 0.851	C D	0.738 0.851	C D	0.006 0.000	NO NO	0.792 0.891	C D	0.060 0.040	YES YES
10. SR-170 NB Off-Ramp & Sheldon Street	AM PM	0.338 0.350	A A	0.344 0.367	A A	0.006 0.017	NO NO	0.350 0.367	A A	0.012 0.017	NO NO
11. Laurel Canyon Boulevard & Sheldon Street	AM PM	0.759 0.742	C C	0.776 0.760	C C	0.018 0.018	NO NO	0.776 0.760	C C	0.018 0.018	NO NO
12. San Fernando Road & Sheldon Street	AM PM	0.640 0.715	B C	0.652 0.726	B C	0.012 0.012	NO NO	0.652 0.726	B C	0.012 0.012	NO NO
13. Glenoaks Boulevard & Sheldon Street	AM PM	0.654 0.627	B B	0.654 0.627	B B	0.000 0.000	NO NO	0.654 0.627	B B	0.000 0.000	NO NO
14. Arleta Ave & Branford Street	AM PM	0.712 0.766	C C	0.712 0.766	C C	0.000 0.000	NO NO	0.712 0.766	C C	0.000 0.000	NO NO
15. Laruel Canyon Boulevard & Branford Street	AM PM	0.694 0.783	B C	0.694 0.783	B C	0.000 0.000	NO NO	0.694 0.783	B C	0.000 0.000	NO NO
16. San Fernando Road & Branford Street	AM PM	0.587 0.627	A B	0.587 0.627	A B	0.000 0.000	NO NO	0.587 0.627	A B	0.000 0.000	NO NO
17. Glenoaks Boulevard & Branford Street	AM PM	0.539 0.557	A A	0.539 0.557	A A	0.000 0.000	NO NO	0.539 0.557	A A	0.000 0.000	NO NO

MITIGATION MEASURES

Proposed mitigation measures consist of measures to reduce the temporary adverse impacts associated with excavation-period activity at and in the vicinity of the project site. The implementation of these measures would fully mitigate the identified temporary adverse project traffic impacts. Table 15 summarizes the project level impacts for all alternatives and scenarios for both the Existing (2011) plus project and Cumulative Base (2015) plus project scenarios.

The traffic impact analysis documented in this report represents a conservative scenario in that it assumes that both workers and truck trips will occur during the peak traffic hours on the surrounding streets (7:00 to 10:00 AM and 3:00 to 6:00 PM). With this assumption, one or two potentially adverse impacts were identified consistently across all four alternatives under Scenarios 1 and 2. These locations are:

- Sheldon Street & Roscoe Boulevard (Intersection 1)
- Arleta Avenue & Sheldon Street (Intersection 9)

Due to the proximity of the intersection of Arleta Avenue & Sheldon Street to the TSG, almost all truck trips traveling to and from the TSG travel through it. A potential measure to avoid that adverse impact would be to schedule truck trips to occur outside the peak hours. However, because the identified adverse impacts occur at intersections projected to operate at reasonably good levels of service (LOS C or D) and the project impacts are moderate (0.060 or less at LOS C and 0.040 or less at LOS D), this may not be necessary.

A construction traffic management plan should be prepared and submitted to LADOT for review and approval prior to the start of any construction work. This plan may include such elements as the designation of haul routes for construction-related trucks, the location of access to the construction site, and temporary traffic control devices or flagmen, as relevant.

Where construction activities would occur within a public street right-of-way around the project site, the following mitigation measures would also apply:

- A site-specific construction work site traffic control plan shall be prepared and submitted to LADOT for review and approval prior to the start of any construction work. This plan may include such elements as the location of any lane closures (if any), restricted hours during which lane closures (if any) would not be allowed, local traffic detours (if any), protective devices and traffic controls (such as barricades, cones, flagmen, lights, warning beacons, temporary traffic signals, warning signs) (as relevant), access limitations for abutting properties (if any), and provisions to maintain emergency access through construction work areas (as relevant).
- Provide signage indicating alternative pedestrian and bicycle access routes, if necessary where existing facilities would be affected. This would include the sidewalks and pedestrian pathways around the perimeter of the project site.
- Provide advance notice of planned construction activities to residents, businesses and property owners immediately adjacent to the construction site.
- Coordinate with emergency service providers (police, fire, ambulance and paramedic services) to provide advance notice of ongoing construction activity and construction hours.

Construction of the proposed project could result in temporary adverse traffic impacts in the immediate vicinity of the project site, leading to localized congestion. Because the impacts would be moderate and of limited duration, however, they are considered to be adverse but not significant. Feasible mitigation measures have been identified to minimize these temporary impacts.

TABLE 15
PROJECT ALTERNATIVES IMPACT MATRIX

Alternative	Scenario	Project Level Impacts			
		Existing (2011) Plus Project		Cumulative Base (2015)Plus Project	
		AM	PM	AM	PM
1. Boulevard Pit	1	0	0	1	2
	2	1	1	1	1
2. Sheldon Pit	1	0	0	0	1
	2	1	1	1	1
3. CAL-MAT	1	0	0	0	1
	2	1	1	1	1
4. Bradley Landfill	1	0	0	0	1
	2	1	1	1	2

5. REGIONAL TRANSPORTATION SYSTEM ANALYSIS

This chapter presents the regional transportation system impact analysis for the proposed project. This analysis was conducted in accordance with the transportation impact analysis procedures outlined in *2010 Congestion Management Program (CMP) for Los Angeles County* (Metro, July 2010). The CMP requires that, when an environmental impact report is prepared for a project, traffic and transit impact analyses be conducted for select regional facilities based on the quantity of project traffic expected to use these facilities.

CMP TRAFFIC IMPACT ANALYSIS

The CMP guidelines require that the first issue addressed is the determination of the geographic scope of the study area. The criteria for determining the study area for CMP arterial monitoring intersections and for freeway monitoring locations are:

- All CMP arterial monitoring intersections where the proposed project will add 50 or more trips during either the AM or PM weekday peak hours of adjacent street traffic.
- All CMP mainline freeway monitoring locations where the proposed project will add 150 or more trips, in either direction, during either the AM or PM weekday peak hours.

The CMP arterial monitoring intersection nearest to the project site is Victory Boulevard & Woodman Avenue. Based on the project trip generation estimates previously presented and a review of the project traffic volumes, the proposed project is not expected to add more than 50 vehicles per hour (vph) at any CMP monitoring intersections during the peak hours. As a result, no further CMP arterial monitoring analysis is required.

The mainline freeway monitoring location nearest to the project site is I-5 at Osborne Street. Based on the incremental project trip generation estimates and the project trip assignment, the proposed project would not add sufficient new traffic to exceed the freeway analysis criteria at this location. Because total estimated project-related traffic in any direction during either weekday peak hour is projected to be below the minimum criteria of 150 vph, no further CMP freeway analysis is required.

CMP TRANSIT IMPACT ANALYSIS

The trip generation estimates used in this study include both worker trips and truck trips during the entire project. It was conservatively assumed that each worker would travel alone to and from the work site and a maximum of 40 workers would be needed during the project. By applying the CMP guidelines (assuming 3.5% transit use), it is estimated that the project could potentially add up to two new transit person trips in both the AM and the PM peak hours. As discussed in Chapter 2, the project site is served by several established public transit routes providing connectivity to public transit services throughout the surrounding area, potentially distributing project transit trips across multiple routes. Given the magnitude of the estimated increase in project-related trips, as well as the temporary nature of any increase, it is concluded that no significant impact on the regional transit system would occur.

6. SUMMARY AND CONCLUSIONS

Fehr & Peers conducted a traffic impact analysis for the proposed Tujunga Spreading Grounds (TSG) Enhancement Project. This analysis assesses potentially adverse traffic impacts caused as a result of truck and worker trips to and from the TSG during construction. The key findings and conclusions of the study are summarized below:

- The proposed project consists of improvements to the 160-acre Tujunga Spreading Grounds located adjacent to the Sheldon-Arleta Landfill in the City of Los Angeles, and is bounded by Laurel Canyon Boulevard to the east, Roscoe Boulevard to the south, Canterbury Avenue to the west and the Tujunga Wash channel to the north. Project construction would occur over a period of up to three years.

- New baseline traffic data was collected for use in this study in June 2011. Detailed level of service analysis was conducted at 17 intersections in the vicinity of the project site for weekday AM and PM peak hours (between 7:00 and 10:00 AM and 3:00 and 6:00 PM, respectively). All of the 17 analyzed intersections are currently operating at acceptable levels of service (LOS C or better).

- Future traffic conditions in the study area were forecast for the year 2015 based on cumulative development projects information and ambient traffic growth. The Cumulative Base (2015) analyses (conditions without project construction) show that all of the 17 study intersections are projected to continue operating at acceptable levels of service (LOS D or better) during both of the analyzed peak hours.

- Project construction activities would begin in 2012 and are estimated to end in 2015. A PCE factor of 2.0 was applied to the estimated truck trips to generate project trip generation estimates with PCE and the adjusted number of PCE trips was used in the traffic impact analysis. It is estimated that the proposed project would generate approximately 136 PCE trips during both the AM and PM peak hours with 104 inbound and 32 outbound trips during the AM peak hour and 32 inbound and 104 outbound trips during the PM peak hour. These estimates are conservative in that they assume that all workers and haul trucks will arrive or depart from the project site during the same peak hour, and that these peak hour activities will also overlap with soil hauling from the site.

- Four separate and distinct project alternatives were developed and analyzed to provide traffic projections while soil is being transported from the TSG removal sites to one of four disposal site alternatives. Two scenarios were created for each alternative to accurately represent all likely truck movements while soil is being excavated and transported out of the TSG. The four potential disposal sites alternatives analyzed are: (1) Boulevard Pit, (2) Sheldon Pit, (3) CAL-MAT, and (4) Bradley Landfill.

- According to the City of Los Angeles' impact criteria, the proposed project would adversely impact one or two intersections depending on the alternative and scenario analyzed.

- A mitigation program was developed to address the identified temporary adverse impacts. By its nature, the proposed project would result in only temporary traffic impacts. Because these impacts would be moderate and of limited duration, they are considered to be less than significant.

REFERENCES

2010 Los Angeles County Congestion Management Program, Los Angeles County Metropolitan Transportation Authority, 2010.

Guide for the Preparation of Traffic Impact Studies, State of California Department of Transportation, December, 2002

Highway Capacity Manual, Transportation Research Board, 2000.

Traffic Study Policies and Procedures, City of Los Angeles Department of Transportation, August, 2011.

Trip Generation, 8th Edition, Institute of Transportation Engineers, 2008.

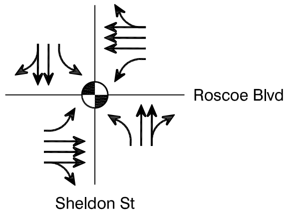
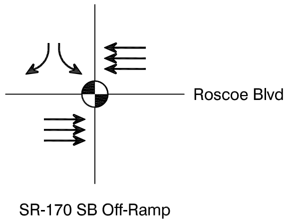
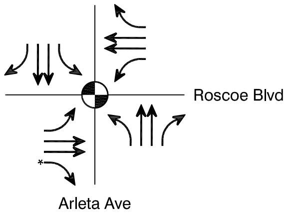
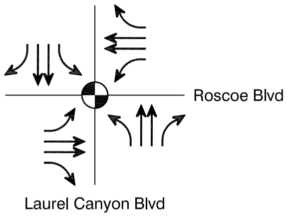
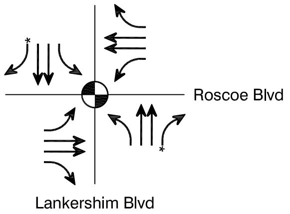
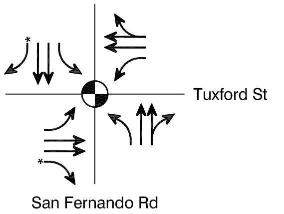
LIST OF PREPARERS

Netai Basu, AICP, Project Manager

Rafael Cobian, P.E., LEED GA, Project Engineer

Leah Ramos, Document Specialist

APPENDIX A:
INTERSECTION LANE CONFIGURATIONS

	EXISTING (2011) CONDITIONS	CUMULATIVE BASE (2015) CONDITIONS	CUMULATIVE BASE (2015) PLUS PROJECT CONDITIONS
1. Sheldon St & Roscoe Blvd		SAME AS EXISTING CONDITIONS	SAME AS EXISTING CONDITIONS
2. SR-170 SB Off-Ramp & Roscoe Blvd		SAME AS EXISTING CONDITIONS	SAME AS EXISTING CONDITIONS
3. Arleta Ave & Roscoe Blvd		SAME AS EXISTING CONDITIONS	SAME AS EXISTING CONDITIONS
4. Laurel Canyon Blvd & Roscoe Blvd		SAME AS EXISTING CONDITIONS	SAME AS EXISTING CONDITIONS
5. Lankershim Blvd & Roscoe Blvd		SAME AS EXISTING CONDITIONS	SAME AS EXISTING CONDITIONS
6. San Fernando Rd & Tuxford St		SAME AS EXISTING CONDITIONS	SAME AS EXISTING CONDITIONS

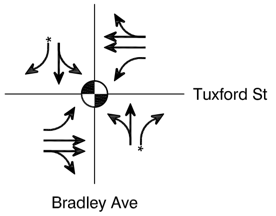
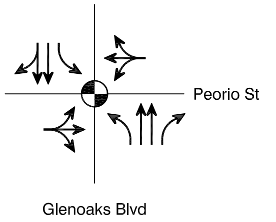
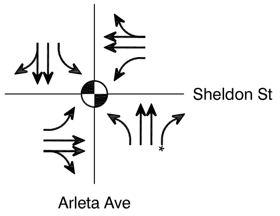
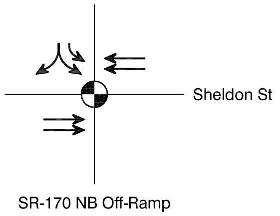
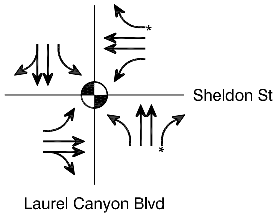
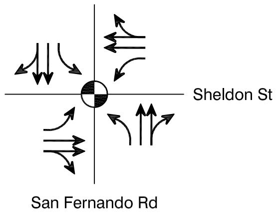
LEGEND

⊕	Traffic Signal
●	Stop Sign
*	Functional Right Turn Lane
NTOR	No Turn On Red

FEHR PEERS

INTERSECTION LANE CONFIGURATIONS

APPENDIX A

	EXISTING (2011) CONDITIONS	CUMULATIVE BASE (2015) CONDITIONS	CUMULATIVE BASE (2015) PLUS PROJECT CONDITIONS
7. Bradley Ave & Tuxford St		SAME AS EXISTING CONDITIONS	SAME AS EXISTING CONDITIONS
8. Glenoaks Blvd & Peorio St		SAME AS EXISTING CONDITIONS	SAME AS EXISTING CONDITIONS
9. Arleta Ave & Sheldon St		SAME AS EXISTING CONDITIONS	SAME AS EXISTING CONDITIONS
10. SR-170 NB Off-Ramp & Sheldon St		SAME AS EXISTING CONDITIONS	SAME AS EXISTING CONDITIONS
11. Laurel Canyon Blvd & Sheldon St		SAME AS EXISTING CONDITIONS	SAME AS EXISTING CONDITIONS
12. San Fernando Rd & Sheldon St		SAME AS EXISTING CONDITIONS	SAME AS EXISTING CONDITIONS

LEGEND

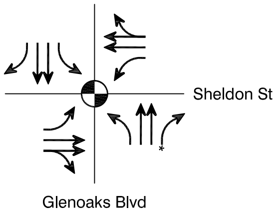
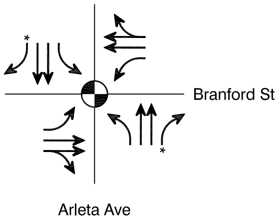
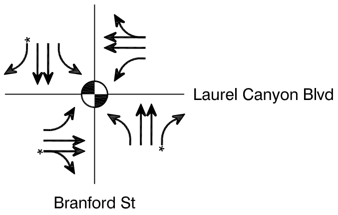
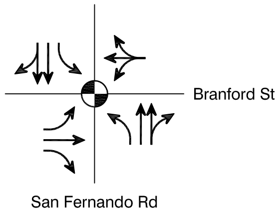
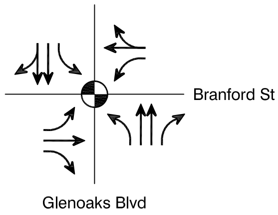
◒	Traffic Signal
●|	Stop Sign
*	Functional Right Turn Lane
NTOR	No Turn On Red

FEHR PEERS

INTERSECTION LANE CONFIGURATIONS

Oct 07, 2011 SR
\\fpla1\data\Jobs\Active\2300s\2393 – Tujunga Spreading Grounds Enhancement Project EIR\Graphics\ACAD\2393_Lane Configs.dwg

APPENDIX A

	EXISTING (2011) CONDITIONS	CUMULATIVE BASE (2015) CONDITIONS	CUMULATIVE BASE (2015) PLUS PROJECT CONDITIONS
13. Glenoaks Blvd & Sheldon St		SAME AS EXISTING CONDITIONS	SAME AS EXISTING CONDITIONS
14. Arleta Ave & Branford St		SAME AS EXISTING CONDITIONS	SAME AS EXISTING CONDITIONS
15. Laurel Canyon Blvd & Branford St		SAME AS EXISTING CONDITIONS	SAME AS EXISTING CONDITIONS
16. San Fernando Rd & Branford St		SAME AS EXISTING CONDITIONS	SAME AS EXISTING CONDITIONS
17. Glenoaks Blvd & Branford St		SAME AS EXISTING CONDITIONS	SAME AS EXISTING CONDITIONS

LEGEND

⊕	Traffic Signal
●	Stop Sign
*	Functional Right Turn Lane
NTOR	No Turn On Red

FEHR & PEERS

INTERSECTION LANE CONFIGURATIONS

APPENDIX A

Oct 07, 2011 SR
\\fpla1\data\Jobs\Active\2300s\2393 – Tujunga Spreading Grounds Enhancement Project EIR\Graphics\ACAD\2393_Lane Configs.dwg

APPENDIX B:
TRAFFIC COUNT SHEETS

[Available from LADWP]

APPENDIX C:
ESTIMATED TRAFFIC VOLUMES

[Available from LADWP]

APPENDIX D:
INTERSECTION LEVEL OF SERVICE WORKSHEETS

[Available from LADWP]

mwhglobal.com

MWH®

BUILDING A BETTER WORLD

618 Michillinda Avenue, Suite 200
Arcadia, California 91007
TEL 626 796 9141
FAX 626 568 6101