

**Draft**

**Environmental Impact Report**

for the

**Lower Reach River Supply Conduit Project**

**SCH# 2004081151**



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

**May 2005**

**INTENTIONALLY LEFT BLANK**

**DEPARTMENT OF WATER AND POWER  
CITY OF LOS ANGELES**

**DRAFT**

**ENVIRONMENTAL IMPACT REPORT**

**LOWER REACH RIVER SUPPLY CONDUIT PROJECT**

**SCH# 2004081151**

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

**May 2005**



**INTENTIONALLY LEFT BLANK**



**Los Angeles Department of Water and Power  
LOWER REACH RIVER SUPPLY CONDUIT PROJECT  
DRAFT ENVIRONMENTAL IMPACT REPORT**

---

**TABLE OF CONTENTS**

	<u>Page</u>
<b>EXECUTIVE SUMMARY</b>	
ES.1 Project Overview .....	ES-1
ES.2 Environmental Analysis .....	ES-2
ES.3 Alternatives to the Project .....	ES-3
ES.4 Cumulative Impacts .....	ES-4
ES.5 Areas of Controversy .....	ES-5
ES.6 Issues to be Resolved .....	ES-5
<b>1. INTRODUCTION AND PURPOSE</b>	
1.1 Introduction .....	1-1
1.2 Purpose and Use of the EIR .....	1-1
1.3 Scope of the EIR .....	1-3
1.4 EIR Organization .....	1-4
1.5 Availability of the Draft EIR for Review .....	1-5
1.6 EIR Process .....	1-6
<b>2. PROJECT DESCRIPTION</b>	
2.1 Background .....	2-1
2.2 LADWP's Project Objectives .....	2-2
2.3 Project Selection Criteria, Location, and Setting .....	2-2
2.4 Proposed Project .....	2-3
2.4.1 Proposed Pipeline Route .....	2-3
2.4.2 Project Components .....	2-4
2.4.2.1 RSC Pipeline .....	2-4
2.4.2.2 Proposed Regulator Station .....	2-8
2.4.2.3 Appurtenant Improvements .....	2-8
2.4.2.4 Abandonment of Existing Lower Reach RSC Pipeline .....	2-9
2.5 Project Specifics .....	2-9
2.5.1 Construction Schedule, Planning, and Labor Force .....	2-9
2.5.2 Staging Areas .....	2-11
2.5.3 Construction Sites .....	2-11
2.5.4 Waste Management .....	2-11
2.5.5 Utility and Services Requirements .....	2-12
2.6 Pipeline Construction Methods .....	2-12
2.6.1 Open Trench Excavation .....	2-12
2.6.2 Jacking Method .....	2-13
2.6.3 Traditional Tunneling .....	2-14

---

2.6.4	Slip Lining.....	2-15
2.7	Operations and Maintenance .....	2-15
2.7.1	System Operation .....	2-15
2.7.2	System Inspection and Maintenance .....	2-15
2.7.3	Emergency Response .....	2-15
2.8	Cumulative Projects .....	2-16
2.9	Intended Uses of the EIR and Other Public Agency Actions.....	2-21
<b>3.</b>	<b>ENVIRONMENTAL ANALYSIS.....</b>	<b>3-1</b>
3.1	Transportation and Traffic ... ..	3-3
3.1.1	Introduction.....	3-3
3.1.2	Regulatory Setting .....	3-3
3.1.3	Environmental Setting.....	3-4
3.1.4	Impacts and Mitigation Measures .....	3-7
3.1.5	Level of Significance after Mitigation .....	3-13
3.1.6	Cumulative Impacts.....	3-13
3.2	Air Quality .....	3-15
3.2.1	Introduction.....	3-15
3.2.2	Regulatory Setting .....	3-15
3.2.3	Environmental Setting.....	3-18
3.2.4	Impacts and Mitigation Measures .....	3-21
3.2.5	Level of Significance after Mitigation .....	3-25
3.2.6	Cumulative Impacts.....	3-25
3.3	Noise .....	3-26
3.3.1	Introduction.....	3-26
3.3.2	Regulatory Setting .....	3-28
3.3.3	Environmental Setting.....	3-29
3.3.4	Impacts and Mitigation Measures .....	3-31
3.3.5	Level of Significance after Mitigation .....	3-36
3.3.6	Cumulative Impacts.....	3-36
<b>4.</b>	<b>ALTERNATIVES ANALYSIS</b>	
4.1	Introduction and Overview.....	4-1
4.2	Alternative Screening Process .....	4-2
4.3	Alternatives Eliminated from Further Consideration.....	4-4
4.3.1	Los Angeles Zoo Parking Lot Route Alternative .....	4-4
4.3.2	Maxwell Street Route Alternative .....	4-4
4.4	Alternative Impact Analysis .....	4-5
4.4.1	No Project Alternative .....	4-5
4.4.1.1	Attainment of Project Objectives .....	4-6

---

4.4.1.2 Impacts .....	4-6
4.4.2 Griffith Park Fire Service Road Route Alternative .....	4-6
4.4.2.1 Attainment of Project Objectives .....	4-8
4.4.2.2 Impacts .....	4-8
4.4.3 Alternatives Summary.....	4-9
4.5 Conclusions and Summary .....	4-10
<b>5. OTHER CEQA CONSIDERATIONS</b>	
5.1 Response to Public Scoping Comments.....	5-1
5.2 Growth-Inducing Impacts .....	5-2
5.3 Irreversible Environmental Changes and Use of Nonrenewable Resources .....	5-3
5.4 Effects Not Found to be Significant .....	5-5
5.5 Significant Unavoidable Environmental Impacts .....	5-8
<b>6. REFERENCES .....</b>	<b>6-1</b>
<b>7. GLOSSARY OF TERMS AND ACRONYMS</b>	
7.1 Glossary of Terms .....	7-1
7.2 Acronyms .....	7-5
<b>8. REPORT PREPARATION TEAM .....</b>	<b>8-1</b>
<b>APPENDICES</b>	
A. Scoping Materials	
A.1. Notice of Preparation	
A.2 Initial Study - River Supply Conduit Project	
A.3. Comment Letters	
B. Summary of Mitigation Measures	
C. Traffic Study	
D. Air Pollutant Emission Calculations	

---

## LIST OF TABLES

ES-1	Summary of Impacts and Mitigation Measures .....	ES-6
1-1	Required EIR Contents .....	1-6
2-1	Summary of Unit Route(s).....	2-4
2-2	Summary of Unit Characteristics and Construction Method .....	2-8
2-3	Proposed Construction Schedule .....	2-9
2-4	Personnel, Equipment, and Refueling Requirements .....	2-10
2-5	Related Projects.....	2-17
2-6	Required Permits and Approvals.....	2-21
3.1-1	Summary of Unit Route(s) and Characteristics .....	3-5
3.1-2	Summary of Potential Trenching Roadway Closures for All Units.....	3-8
3.2-1	Federal and State Ambient Air Quality Standards .....	3-16
3.2-2	Attainment Status for the South Coast Air Basin .....	3-17
3.2-3	Monthly Average Temperatures and Precipitation .....	3-18
3.2-4	Ambient Air Quality Monitoring Data from the Project Area .....	3-20
3.2-5	Regional Significance Thresholds.....	3-22
3.2-6	Mitigated Maximum Daily Construction Emissions (lbs/day) .....	3-23
3.3-1	Examples of Protective Noise Levels Recommended by USEPA .....	3-29
3.3-2	Land Use Compatibility for Community Noise Environment.....	3-30
3.3-3	Ambient Noise Levels Representative of the Project Area.....	3-33
3.3-4	Noise Emission Characteristics of Construction Equipment .....	3-34
4-1	Summary of Alternatives.....	4-10
4-2	Comparison of Alternatives to the Proposed Project .....	4-11
8-1	List of Preparers and Reviewers .....	8-1

## LIST OF FIGURES

1-1	Regional Location .....	1-2
1-2	The EIR Process .....	1-7
2-1	Lower Reach .....	2-5
2-2	Other Planned or Proposed Projects.....	2-20
3.2-1	South Coast Air Basin .....	3-19
3.3-1	Typical Range of Common Sounds Heard in the Environment.....	3-27
3.3-2	Examples of Outdoor Day-Night Average Sound Levels in dB Measured at Various Locations .....	3-28
3.3-3	Noise Monitoring Locations.....	3-32
4-1	Project Alignment and Possible Alternatives .....	4-3
4-2	Map of Griffith Park Fire Service Road .....	4-7

# Executive Summary

---

The existing Los Angeles Department of Water and Power's (LADWP) River Supply Conduit (RSC) is a major water transmission pipeline in the LADWP water system. Because of differing system requirements and operational and maintenance needs between the northern and southern sections of this 13.7 mile long pipeline, LADWP has divided the RSC into reaches (Upper Reach and Lower Reach). The Upper Reach extends from the North Hollywood Pump Station to the Hollingsworth Spillway north of Griffith Park. The Lower Reach extends from Hollingsworth Spillway to the Ivanhoe Reservoir in the Silver Lake neighborhood of Los Angeles.

The LADWP proposes to construct a new larger RSC pipeline to replace the Lower Reach of the existing RSC pipeline in a new alignment (Lower Reach RSC Project or proposed project). The existing RSC pipeline has provided over 50 years of continuous service to the City of Los Angeles, but its reliability and capacity are near its design life limits. The LADWP, as the lead agency for this project, has prepared a Draft Environmental Impact Report (EIR) in compliance with the California Environmental Quality Act (CEQA) Guidelines. This Executive Summary provides an overview of the key information presented in the Draft EIR. For a complete description of the proposed project, its impacts, and alternatives, the reader is referred to Sections 2, 3, and 4 of the EIR, respectively.

## ES.1 Project Overview

The proposed project would involve the construction of approximately 37,400 linear feet (about 7.1 miles including two branch lines) of 48-, 60-, 66-, 72-, 84-, and 96-inch diameter welded steel underground pipeline and appurtenant structures (e.g., maintenance/access holes, flow meters, valves, and/or vaults). Construction of the proposed project pipeline would occur within existing street rights-of-way, LADWP property and easements, or open space/recreation areas.

As part of the Lower Reach RSC pipeline construction, a regulator station would be built underground inside a vault within the Headworks Spreading Grounds site. This station would consist of approximately five smaller pipe legs (two 24-inch and three 16-inch legs). Each pipe leg would have a control valve, which would be operated as necessary to maintain the pressure requirements downstream within the proposed Lower Reach RSC pipeline.

Factors contributing to the need for improvements to LADWP's water distribution system include: (1) increased system demand, (2) aged pipeline with history of leaks, (3) California Department of Health Services Drinking Water Regulations, (4) reduced open reservoir storage due to more stringent state and federal water quality regulations, and (5) susceptibility to earthquake and other natural disasters. In addition, the LADWP's water distribution system must be capable of handling system demands, and hydraulic losses must be minimized. To address these issues, LADWP has identified the following objectives for the proposed project:

- Provide a more reliable supply of water to the central area of the City of Los Angeles.
- Provide a larger flow capacity to adequately meet the current water requirements of the City of Los Angeles.
- Provide higher water pressure to meet California Department of Health Services Drinking Water Regulations.
- Compensate for the loss of water storage within the LADWP water distribution system.

As the existing RSC has aged, numerous issues regarding the pipeline have emerged. Sections of the existing RSC pipeline are either unpressurized or are at very low pressures. As such, the existing pipeline is below the current requirements of the California Department of Health Services Drinking Water Regulations (Title 22,

---

§64566(c)), which require “water mains to be designed to have at least 5 psig [pounds per square inch gauge] pressure throughout any buried length of the main except when the main is removed from service for repairs or maintenance.” These minimum pressures help to prevent cross-contamination from other buried utilities, in particular, sanitary sewers. At the same time, some sections of the pipe are subject to pressures greater than those recommended by the manufacturer. Additionally, over the years, the existing RSC pipeline has experienced cases of pipe leaks. For example, in 2001, leaking pipe joints near the intersection of Los Feliz Boulevard and Riverside Drive were repaired using an internal seal system. Although the leaks were stopped, the seals, which are still in place, were only intended to be a temporary measure. Further impacting the service of the existing RSC, and in order to meet new state and federal water quality regulations, the LADWP is proposing to remove the Silver Lake Reservoir Complex, including both Silver Lake and Ivanhoe Reservoirs, which are destinations for the existing RSC, from direct service to the LADWP water distribution system. Water storage currently provided by the Silver Lake Reservoir Complex would be replaced by an underground covered storage reservoir at the former Headworks Spreading Grounds site.

## ES.2 Environmental Analysis

An Initial Study for the proposed RSC pipeline replacement, which included both the Upper and Lower Reaches, was issued in August 2004, and is provided in Appendix A.2 for reference. Although there is a need, as outlined in Section 2.2 of this document, to replace both the Upper Reach RSC and the Lower Reach RSC, complications associated with project design, budget considerations, and alignment constraints have pushed the Upper Reach RSC off to sometime in the future. Independent of the Upper Reach RSC, operating constraints due to the physical condition of the Lower Reach RSC dictate that LADWP move forward with the replacement of this section of the pipeline. When LADWP decides to replace the Upper Reach RSC, a separate environmental review for that project will be conducted to satisfy the requirements of CEQA. Although the construction schedule for the Upper Reach RSC is speculative at this time, the potential cumulative impacts of the construction of the proposed Upper Reach RSC have been addressed within this document in Section 3.

As part of the Initial Study, mitigation measures were identified and have been committed to by the LADWP to reduce the impacts associated with the proposed project. While the criteria for determining significant impacts are unique to each issue area, the environmental analysis applies a uniform classification of the impacts based on the following definitions:

- A designation of *no impact* is given when no adverse changes in the environment are expected.
- A *less-than-significant impact* would cause no substantial adverse change in the environment.
- A *less-than-significant impact with mitigation* avoids substantial adverse impacts on the environment through mitigation.
- A *significant but unavoidable impact* would cause a substantial adverse impact on the environment, and no feasible mitigation measures would be available to reduce the impact to a less-than-significant level.

In the Initial Study, mitigation measures were identified for aesthetics, biological resources, cultural resources, geology and soils, and hazards and hazardous materials, which would reduce impacts within these environmental issue areas to less-than-significant levels (see Appendix A.2 and Section 5.4). Impacts associated with agricultural resources, hydrology and water quality, land use and planning, mineral resources, population and housing, public services, recreation, and utilities and service systems were found to be less than significant or

---

have no impacts; therefore, no mitigation measures were required. However, the Initial Study concluded that the proposed project would have the potential to cause a significant impact for the following environmental issue areas: transportation and traffic, air quality, and noise.

The Draft EIR analyzes those issue areas with the potential to be significant for the Lower Reach RSC Project, and proposes mitigation measures to reduce significant impacts as much as feasibly possible (transportation and traffic and air quality), or to less-than-significant levels (noise). Table ES-1 (at the end of this section) summarizes the identified transportation and traffic, air quality, and noise impacts of the proposed project and those mitigation measures recommended to reduce significant impacts, to the extent feasible. For a complete listing of mitigation measures proposed for the Lower Reach RSC Project, refer to Appendix B.

Construction of the pipeline and related facilities would temporarily impact pedestrian movements on sidewalks and at crosswalk locations, temporarily affect transit interface locations (e.g., bus stops) and transit vehicle travel times, and temporarily eliminate on-street parking at the location of trenching activities. While typical traffic impact mitigation measures, such as stoplights, would not be available for impacts caused by construction, the need for manual traffic control, detours, and roadway/approach closures would be defined through a Traffic Construction Management Plan (Mitigation Measure T-1). Additionally, implementation of Mitigation Measures T-2 through T-5 would reduce impacts to public and emergency vehicle access, parking, public transit, and pedestrian safety to less-than-significant levels. However, since there are no measures that can be implemented to make the proposed project's traffic flow impacts less than significant, a Statement of Overriding Considerations would be required for construction of the Lower Reach RSC Project.

Implementation of Mitigation Measures AQ-1 and AQ-2 would reduce construction related air quality impacts (PM<sub>10</sub> and NO<sub>x</sub>); however, due to the magnitude of the construction activities the air pollutant emissions would continue to be significant and unavoidable. A Statement of Overriding Considerations would be required for construction of the Lower Reach RSC Project.

Implementation of Mitigation Measures N-1 through N-6 would reduce potentially significant construction noise impacts to levels that would be less than significant. For operations, potentially adverse noise impacts associated with the regulator station would be less than significant, and no mitigation measures would be required.

### **ES.3 Alternatives to the Project**

The proposed project, which includes the installation of approximately 7.1 miles of new pipeline within the City of Los Angeles, would replace and realign the existing Lower Reach of the RSC pipeline, which has provided over 50 years of continuous service to the City of Los Angeles. Various project alternatives were evaluated to determine the extent to which they attain the basic project objectives, while lessening any potentially significant environmental effects of the proposed project (e.g. transportation and traffic, air quality, and noise).

The following four alternatives to the proposed project were initially considered:

- No Project – With this alternative, proposed project development would not occur; or the predictable or reasonably foreseeable circumstance that would result if the project did not proceed or was not approved would occur.
- Griffith Park Fire Service Road Route – This alternative evaluates the feasibility of constructing a section of RSC Units 2 and 3 through an existing Griffith Park Fire Service Road traveling parallel to the I-5 freeway east of the Harding Municipal Golf Course.

- 
- Los Angeles Zoo Parking Lot Route - This alternative evaluates the construction of RSC Unit 2 through the existing Los Angeles Zoo parking lot.
  - Maxwell Street Route – This alternative evaluates the feasibility of constructing a connection to the Rowena Tank from Riverside Drive by tunneling under Maxwell Street as part of RSC Unit 4. The pipeline would then continue from the Rowena Tank east on Rowena Avenue to West Silver Lake Drive and south along West Silver Lake Drive to Armstrong Avenue.

Of these alternatives, the Los Angeles Zoo Parking Lot and the Maxwell Street Route Alternatives were eliminated from further consideration because they would not reduce construction impacts, as discussed in Section 4.3.

For the other alternatives (see Section 4.4), it was found that the No Project Alternative would be expected to reduce all proposed project impacts, but would meet none of the project goals and objectives. Without the proposed project improvements, the LADWP would need to implement additional solutions to address the concerns with the current distribution system and to meet the Department of Health and Safety regulations and standards not achieved under this alternative. As such, the Griffith Park Fire Service Road Route Alternative would be the environmentally superior alternative since it would reduce noise impacts and have comparable air quality and traffic impacts to the proposed project; however, this alternative would require additional design considerations to accommodate the project pipeline and the existing 30-inch reclaimed water pipeline within the fire service road. Due to the design constraints of the Griffith Park Fire Service Road Route Alternative, the LADWP has chosen to proceed with the proposed project.

## **ES.4 Cumulative Impacts**

A list of past, present, and future projects within the vicinity of the proposed project was developed to evaluate cumulative impacts. The cumulative project list provided in Section 2.8 includes projects that are either reasonably foreseeable or are expected to be constructed or operated during the life of the proposed project. Cumulative impacts associated with the construction and operation of the proposed project are discussed for each issue area (see Sections 3.1.6, 3.2.6, and 3.3.6).

Transportation and traffic impacts would be cumulatively considerable if those projects listed in Section 2.8 were constructed or operated concurrently with the construction of the Lower Reach RSC pipeline. Since several of the cumulative projects identified in Section 2.8 would be constructed and/or operated during the construction period of the proposed project, and transportation and traffic impacts associated with the proposed project are significant, cumulative transportation and traffic impacts would also be significant.

Air quality emissions from those projects listed in Section 2.8 would only have the potential to cause cumulatively significant impacts if they were constructed concurrently with the Lower Reach RSC pipeline. Several of the cumulative projects identified in Section 2.8 would be constructed at least partly during the construction period of the proposed project. In addition, it is anticipated that the majority of the projects would involve some level of ground disturbance, such as grading and trenching, that would result in at least moderate levels of diesel exhaust emissions and fugitive dust. Therefore, the cumulative projects identified in Section 2.8 could further exacerbate the projected short-term significant air quality impacts identified for the proposed project. Therefore, cumulative air quality impacts are considered to be significant.

Noise levels from a cumulative project would have the potential to cause cumulatively considerable impacts if it were constructed at the same time and within approximately one-quarter mile of the proposed project. Of the



---

cumulative projects identified in Section 2.8, only the Silver Lake Reservoir Complex Storage Replacement (SLRCSR) Project would be located within one-quarter mile of the proposed Lower Reach alignment and would be constructed during the construction period of the proposed project. Mitigation measures would be implemented as part of the SLRCSR Project, as well as the proposed project, to reduce the impacts to less-than-significant levels. Furthermore, all projects would be required to comply with local noise ordinances. Therefore, cumulative noise impacts would be less than significant.

## **ES.5 Areas of Controversy**

CEQA Guidelines §15123(b)(2) requires that an EIR Executive Summary identify areas of controversy known to the lead agency, including issues raised by other agencies and the public. The LADWP has consulted with agencies such as the Metropolitan Transportation Authority (MTA), California Department of Transportation (CalTrans), City of Los Angeles Department of Transportation, City of Los Angeles Department of Public Works, City of Los Angeles Department of Recreation and Parks, City of Burbank Public Works Department, City of Burbank Park, Recreation & Community Services Department, and all responsible and trustee agencies. While issues and concerns were expressed during the public review period for the Initial Study (see Appendix A.3), they were generally associated with the Upper Reach RSC pipeline, which has been removed from the scope of the proposed project. No outstanding issues or areas of controversy have been identified for the Lower Reach RSC Project.

## **ES.6 Issues to be Resolved**

CEQA Guidelines §15123(b)(3) requires that an EIR represent issues to be resolved by the lead agency. Project-related environmental impacts have been mitigated to the extent feasible. Although mitigation measures have been applied to reduce impacts, significant and unavoidable impacts have been identified for transportation and traffic and air quality. To move forward with the proposed project, the LADWP must adopt a Statement of Overriding Considerations along with project findings.

**Table ES-1. Summary of Impacts and Mitigation Measures Identified in the EIR**

Impact	Mitigation Measures	Level of Significance After Mitigation
<b>Transportation and Traffic</b>		
T-1. The installation of the water line within, adjacent to, or across a roadway would reduce the number of, or the available width of, one or more travel lanes during the peak traffic periods, resulting in a temporary disruption to traffic flow and/or increased traffic congestion.	T-1 Prior to the start of construction, LADWP shall submit a Construction Traffic Management Plan to the Los Angeles Department of Transportation for review and approval prior to the start of any construction work. The plan shall show the location of roadway or lane closures, traffic detours, haul routes, hours of operation, and local access (maintenance of), including bike lanes if applicable. The Plan shall also discuss the use of flag persons, warning signs, lights, barricades, cones, etc. according to standard guidelines outlined in the Caltrans Traffic Manual, the Standard Specifications for Public Works Construction, and the Work Area Traffic Control Handbook (WATCH).	Significant.
T-2. A major roadway (arterial or collector classification) would be closed to through traffic as a result of construction activities and there would be no suitable alternative route available.	T-1 (above).	Significant.
T-3. Construction activities would restrict access to or from adjacent land uses and there would be no suitable alternative access.	<p>T-2 LADWP shall provide a minimum of 48-hour advance notification of the potential for disrupted access to and parking for any business, residence, or recreational facility that may experience delayed access or reduced parking capacity in the vicinity. The notification shall include information on restoring access and the estimated amount of time that access may be blocked.</p> <p>T-3 If vehicular access to businesses, residences, and recreational facilities cannot be restored within eight (8) hours, LADWP or its construction contractor shall provide a one lane temporary vehicular bridge for access (LADWP Specification F01560 - Project Controls, Section 3.07D).</p>	Less than Significant.
T-4. Construction activities would restrict the movements of emergency vehicles (police cars, fire trucks, ambulances, and paramedic units) and there would be no reasonable alternative access routes available.	T-4 LADWP shall coordinate in advance with emergency service providers to avoid restricting movements of emergency vehicles. Police departments, fire departments, ambulance services, and paramedic services shall be notified in advance by LADWP of the proposed locations, nature, timing, and duration of any construction activities and advised of any access restrictions that could impact their effectiveness. At locations where access to nearby property is blocked, provision shall be ready at all times to accommodate emergency vehicles, such as plating over excavations, short detours, and alternate routes in conjunction with local agencies. The Traffic Construction Management Plan (T-1) shall include details regarding emergency services coordination and procedures.	Less than Significant.

Impact	Mitigation Measures	Level of Significance After Mitigation
T-5. Construction activities or staging activities would increase the demand for and/or reduce the supply of parking spaces and there would be no provisions for accommodating the resulting parking deficiencies.	T-2 (above).	Less than Significant.
T-6. Construction activities would disrupt public transit service and there would be no suitable alternative routes or stops.	T-5 LADWP shall coordinate in advance with MTA to avoid restricting movements of public transportation. MTA shall be notified in advance by LADWP of the proposed locations, nature, timing, and duration of any construction activities and advised of any access restrictions that could impact existing bus stops and service routes. Traffic Construction Management Plan (Mitigation Measure T 1) shall include details regarding public transportation coordination and procedures, and copies shall be provided to MTA.	Less than Significant.
T-7: Construction activities of the project would result in safety problems for vehicular traffic, pedestrians, transit operations, or trains.	T-1 (above).	Less than Significant.
<b>Air Quality</b>		
AQ-1. Construction emissions would exceed the emission thresholds, and would therefore cause a short-term impact to local air quality conditions.	<p>AQ-1 LADWP shall implement the following measures, in addition to/or as required by SCAQMD Rule 403, to reduce PM10 emission during construction:</p> <ul style="list-style-type: none"> <li>• Ground cover will be replaced in disturbed areas as quickly as possible;</li> <li>• Active sites will be watered at least twice daily;</li> <li>• All dirt hauling trucks will have tightly secured coverings;</li> <li>• Trenching and excavation activities will be suspended during first and second stage smog alerts, and when wind speeds exceed 25 mph;</li> <li>• After clearing, trenching, earth moving, or excavation is completed, the entire area of disturbed soil will be treated. Treatment, which will also occur during non-work days if necessary, will include watering, revegetating, or use of soil binders to prevent wind pick-up of the soil until the area is paved or otherwise developed to preclude dust generation and dispersion;</li> <li>• Construction management techniques, including reducing the number of pieces of equipment used simultaneously and increasing the distance between the emission sources, will be employed as feasible to reduce potential emissions; and</li> <li>• Street sweeping or washing will be performed at the conclusion of each workday and when needed.</li> </ul> <p>AQ-2 LADWP shall implement the following mitigation measures to reduce NOx and PM10 emissions from non-road construction vehicles during construction:</p> <ul style="list-style-type: none"> <li>• Tier 1 mobile construction equipment shall be used on-site;</li> <li>• Construction equipment shall be maintained in tune per manufacturer's specifications;</li> <li>• California Air Resources Board certified ultra low sulfur diesel fuel containing 15 ppm sulfur or less shall be used for on-site mobile and stationary construction equipment; and</li> <li>• Diesel engine idle time shall be restricted to no more than five minutes, except for construction equipment that needs to be maintained at idle to perform.</li> </ul>	Significant.

Impact	Mitigation Measures	Level of Significance After Mitigation
AQ-2. Construction of the proposed project would expose sensitive receptors to substantial pollutant concentrations.	AQ-1 through AQ-2 (above).	Significant.
AQ-3. Construction of the proposed project would be cumulatively considerable.	AQ-1 through AQ-2 (above)	Significant.
<b>Noise</b>		
N1. Construction of the proposed project would expose persons to or generate noise levels in excess of standards.	<p>N-1 LADWP or its construction contractor shall provide advance notice, between two and four weeks prior to construction, by mail to all residents or property owners within 100 feet of the pipeline alignment. The announcement shall state specifically where and when construction will occur in the area. If construction delays of more than 7 days occur, an additional notice shall be made, either in person or by mail. Notices shall provide tips on reducing noise intrusion, for example, by closing windows facing the planned construction. The LADWP shall also publish a notice of impending construction in local newspapers, stating when and where construction will occur.</p> <p>N-2 All noise-producing project equipment and vehicles using internal combustion engines shall be equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise reducing features kept in good operating condition that meet or exceed original factory specification. Mobile or fixed "package" equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and noise control features which are readily available for that type of equipment.</p> <p>N-3 All noise producing equipment in use along the project alignment shall be operated in the quietest manner possible. The equipment operator shall also avoid unnecessary equipment idling for long periods.</p> <p>N-4 The use of noise producing signals, including horns, whistles, alarms, and bells shall be for safety warning purposes only.</p> <p>N-5 Portable noise screens shall be used to provide additional shielding for jack hammering or other similar very noisy type activities when work is close to noise-sensitive areas.</p> <p>N-6 Nighttime construction activities (before 7:00 a.m. and after 9:00 p.m.) within Griffith Park shall comply with all Department of Recreation and Parks permit stipulations and shall not occur within 500 feet of residential buildings.</p>	Less than Significant.
N2. The proposed project would create substantial temporary or periodic increases in ambient noise levels.	N-1 through N-6 (above).	Less than Significant.
N3. Construction of the proposed project would generate excessive groundborne vibration or groundborne noise.	N-1 (above).	Less than Significant.

# 1. Introduction and Purpose

---

## 1.1 Introduction

This Draft Environmental Impact Report (EIR) has been prepared to analyze potentially significant environmental effects associated with the construction and operation of the Los Angeles Department of Water and Power's (LADWP) proposed Lower Reach River Supply Conduit Project (proposed project). The LADWP proposes to construct a new larger Lower Reach River Supply Conduit (RSC) pipeline to replace the Lower Reach of the existing RSC pipeline in a new alignment. The proposed project would involve the construction of approximately 37,400 linear feet (about 7.1 miles including two branch lines) of 48-, 60-, 66-, 72-, 84-, and 96-inch diameter (LADWP, 2005a) welded steel underground pipeline, and would also include construction of appurtenant structures (e.g., maintenance/access holes, flow meters, valves, and/or vaults). As part of the Lower Reach RSC pipeline construction, a regulator station would be built underground inside a vault within the Headworks Spreading Grounds site.

The new Lower Reach RSC pipeline would be located in public street rights-of-way, LADWP property, and LADWP utility easements in the communities of Silver Lake and Los Feliz (including Griffith Park) in the City of Los Angeles. The project area is bounded by U.S. Highway 134 (Ventura Freeway) to the north, U.S. Highway 101 (Hollywood Freeway) to the west and southwest, Interstate 5 (Golden State Freeway) to the east, and State Route 2 (Glendale Freeway) to the southeast (see Figure 1-1). The Lower Reach RSC Project is proposed by the LADWP to provide a more reliable supply of water to the central area of the City of Los Angeles, provide a larger flow capacity to adequately meet the current water requirements of the City of Los Angeles, provide higher water pressure that meets the California Department of Health Services Drinking Water Regulations, and compensate for the loss of water storage within the LADWP water distribution system.

## 1.2 Purpose and Use of the EIR

The Draft EIR for the Lower Reach RSC Project is intended to serve as an informational document, as outlined in §15121(a) of the California Environmental Quality Act (CEQA) Guidelines:

*An EIR is an informational document which will inform public agency decisionmakers and the public generally of the significant environmental effect of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR along with other information which may be presented to the agency.*

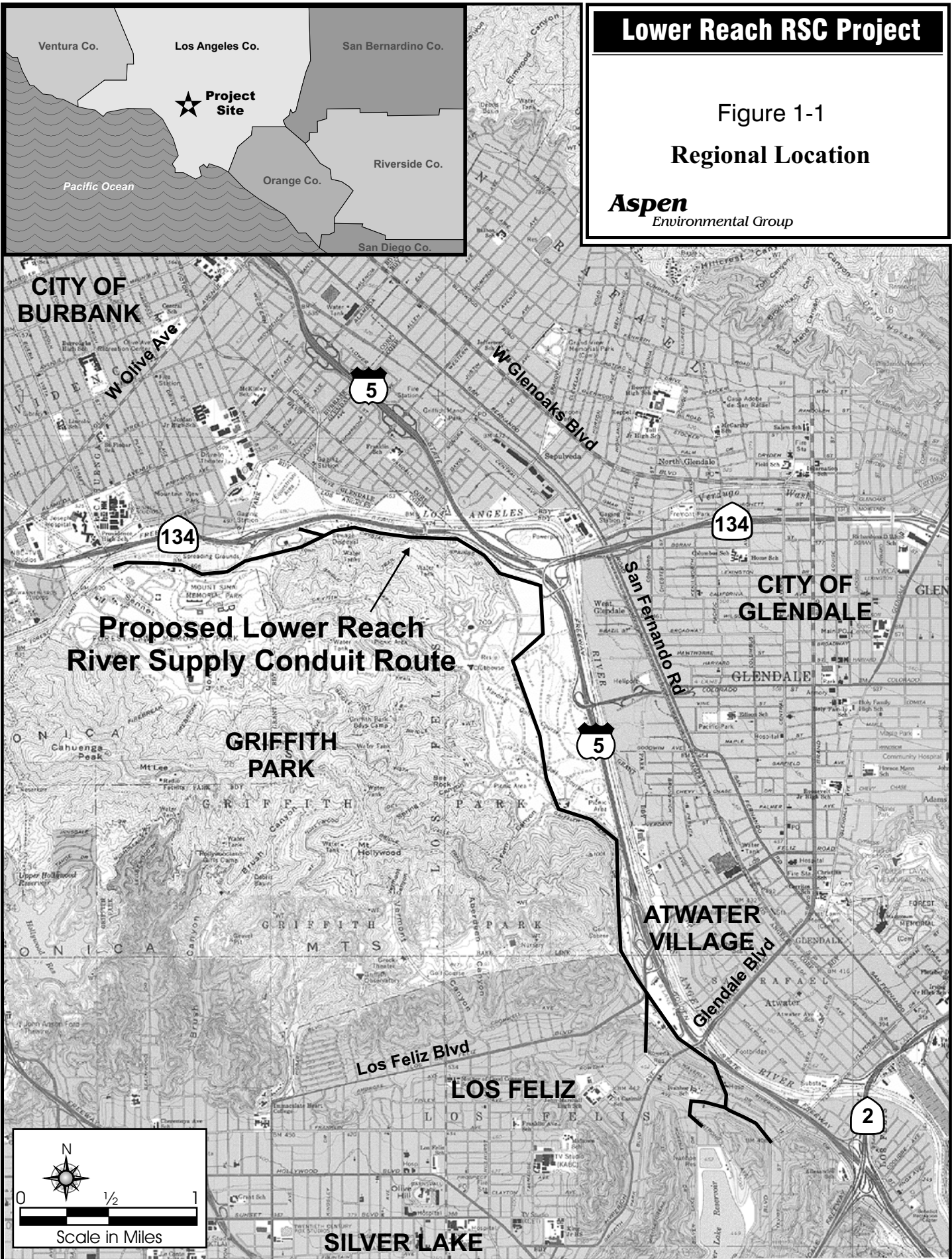
This EIR will provide the primary source of environmental information for the lead, responsible, and trustee agencies to consider when exercising any permitting authority or approval power directly related to implementation of this project.

# Lower Reach RSC Project

Figure 1-1

## Regional Location

**Aspen**  
Environmental Group



---

When a public agency determines that there is substantial evidence that a project may have a significant effect on the environment, the agency must prepare an EIR before a decision is made to approve or deny the project. EIRs not only identify significant or potentially significant environmental effects, but also identify ways in which those impacts can be reduced to less-than-significant levels, whether through the imposition of mitigation measures or through the implementation of specific alternatives to the project. In a practical sense, EIRs function as a technique for fact-finding that allows an applicant, concerned citizens, and agency staff an opportunity to collectively review and evaluate baseline conditions and project impacts through a process of information disclosure. This report, while a summary of facts, reflects the professional judgment of the Lead Agency (i.e., LADWP).

As the Lead Agency, the LADWP will decide whether or not to implement the proposed project. The LADWP will consider the information in the EIR along with other information before taking any action to construct the proposed project. The conclusions of the EIR regarding environmental impacts do not control the LADWP's discretion to approve, deny, or modify the project, but instead are presented as information intended to aid the decision-making process.

### **1.3 Scope of the EIR**

As described in §15143 of the CEQA Guidelines:

*The EIR shall focus on the significant effects on the environment. The significant effects should be discussed with emphasis in proportion to their severity and probability of occurrence. Effects dismissed in an Initial Study as clearly insignificant and unlikely to occur need not be discussed further in the EIR unless the Lead Agency subsequently receives information inconsistent with the finding in the Initial Study.*

In compliance with CEQA, the LADWP completed a multi-part process to determine the appropriate scope of issues to be examined in the EIR. An Initial Study (IS) for the proposed RSC pipeline, including both the Upper and Lower Reaches, provided in Appendix A.2 of this Draft EIR, was prepared to identify potentially significant impacts and to evaluate issues that appeared unlikely to involve significant impacts.<sup>1</sup> The IS was distributed to City of Los Angeles, City of Burbank, and Los Angeles County agencies, as well as Los Angeles City Council Members on August 23, 2004. A copy of the IS was also provided to each of four local libraries (Valley Plaza Branch Library, North Hollywood Regional Library, Atwater Village Library, and Buena Vista Branch Library) located within the vicinity of the proposed Upper and Lower Reach alignments for the public to review. The LADWP also solicited input from other agencies on the IS through the distribution of a Notice of Preparation (NOP), which is provided in Appendix A.1. The NOP was distributed to several neighborhood council groups, homeowner associations, and the media studios in Burbank. The 30-day review period for the IS/NOP ended on September 21, 2004. The review period was extended to October 18, 2004 to accommodate the City of Burbank. Comment letters and/or emails were received from the California Department of Transportation (District 7); South Coast Air Quality Management District; California Department of Fish and Game; the Metropolitan

---

<sup>1</sup> Note: As a result of comments received during the public review period for the Initial Study, and complications associated with the design and alignment of the proposed Upper Reach of the RSC pipeline, the scope of the proposed project was reduced to include only the Lower Reach.

---

Transportation Authority; City of Los Angeles, Department of Transportation; City of Los Angeles, Department of Recreation and Parks; City of Burbank, Park, Recreation & Community Services Department; Burbank Water and Power; and City of Burbank, Public Works Department. One additional letter from the City of Los Angeles, Department of Public Works was received after the close of the review period. These letters and e-mails are provided in Appendix A.3 for reference.

The IS/NOP identified potentially significant impacts associated with the construction and/or operation of the proposed project in the following three environmental issue areas:

- Air Quality
- Noise
- Transportation/Traffic.

Due to complications associated with project design, budget considerations, and alignment constraints regarding the proposed Upper Reach RSC, it was determined that the Upper Reach of the project would be on hold until these issues can be resolved. However, independent of the Upper Reach RSC, operating constraints due to the physical condition of the Lower Reach RSC dictate that LADWP continue to move forward with the replacement of the Lower Reach of the pipeline. Section 3 of this EIR provides a detailed evaluation for the Lower Reach RSC for the three issues that were identified in the IS as having potentially significant impacts, and provides mitigation measures to reduce impacts to less-than-significant levels, to the extent feasible. When LADWP decides to replace the Upper Reach RSC, a separate environmental review for that project will be conducted. To satisfy the requirements of CEQA, the potential cumulative impacts of the proposed Upper Reach RSC have been discussed within this document in Section 3.

In accordance with CEQA Guidelines §15128 (*Effects Found Not to be Significant*), an EIR “shall contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR.” Those environmental issues having less-than-significant or no impacts were discussed in an IS prepared in August 2004, which is provided in Appendix A.2. A summary of the environmental issues having less-than-significant or no impacts is provided in Section 5.4 of this Draft EIR.

## 1.4 EIR Organization

This EIR is organized into eight sections, each dealing with a separate aspect of the required content as described in the CEQA Guidelines. To help the reader locate information of particular interest, a brief summary of the contents of each section of the EIR is provided. The following sections are contained within the EIR:

- **Executive Summary:** This section contains an overview of the scope of the EIR, as well as a summary of environmental impacts, proposed mitigation measures, level of significance after mitigation, and unavoidable significant impacts. This section also contains a summary description of project alternatives.
- **Section 1. Introduction:** This section provides an overview of the purpose and use of an EIR, the scope of this EIR, the environmental review process for the proposed project, and the general format of the document.
- **Section 2. Project Description:** This section outlines the project objectives, describes the project location, summarizes the proposed project, discusses cumulative projects, and discusses intended uses of the EIR.
- **Section 3. Environmental Analysis:** This section describes and evaluates the environmental issue areas, including the existing environmental setting and background, applicable environmental thresholds, environmental impacts



---

(both short term and long term), proposed mitigation measures capable of minimizing environmental harm, and the cumulative impact analysis.

- **Section 4. Alternatives Analysis:** This section analyzes feasible alternatives to the proposed project, including the No Project Alternative and alternative routes for the proposed Lower Reach RSC alignment.
- **Section 5. Other CEQA Considerations:** This section provides responses to public scoping comments; provides a summary of the proposed project's potential growth-inducing impacts; identifies project impacts that are significant and unavoidable by issue area; summarizes those environmental issues found not to be significant for the proposed Lower Reach RSC pipeline; and identifies any irreversible changes to the natural environment resulting from the proposed project.
- **Section 6. References:** This section identifies all references used and cited in the preparation of this report.
- **Section 7. Glossary of Terms and Acronyms:** This section provides a description of environmental and project specific terms, abbreviations, and acronyms used throughout the document.
- **Section 8. Report Preparation Staff:** This section identifies all individuals responsible for the preparation of this report.
- **Appendices:** Technical data supporting the analysis or contents of this EIR are provided in appendices to the document, or in project correspondence and technical files located at the offices of the LADWP.

## 1.5 Availability of the Draft EIR for Review

This Draft EIR has been distributed to affected agencies, surrounding cities, counties, and interested parties for a 45-day review period in accordance with CEQA Guidelines §15087. During the 45-day public review period, the Draft EIR may be accessed via the internet at the following website: <http://www.ladwp.com/ladwp/cms/ladwp004156.jsp>, and is also available for public review at the following Los Angeles Public Library locations:

North Hollywood Regional  
5211 Tujunga Avenue  
North Hollywood, CA 91601  
(818) 766-7185

Atwater Village  
3379 Glendale Boulevard  
Los Angeles, CA 90039  
(323) 664-1353

Los Feliz Branch Library  
1874 Hillhurst Avenue  
Los Angeles, CA 90027  
(323) 913-4710

Interested parties may provide written comments on the Draft EIR prior to the close of the public review period. Comments should be submitted in writing and addressed to:

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

Information concerning the public review schedule for the Draft EIR can be obtained by contacting Sarah Easley at (213) 367-1276.

Upon completion of the 45-day public review period, written responses to comments on environmental issues discussed in the Draft EIR will be prepared. Information and comments will be incorporated into the Final EIR, as appropriate.

## 1.6 EIR Process

This EIR has been prepared to meet all of the substantive and procedural requirements of CEQA (California Public Resources Code §21000 et seq.) and the CEQA Guidelines (California Code of Regulations, Title 14,

§15000 et seq.). Table 1-1 presents a list of sections required under the CEQA Guidelines, along with a reference to the chapter in this EIR where these items can be found.

The LADWP is the Lead Agency for this project, taking primary responsibility for conducting the CEQA environmental review and approving or denying the project. Consistent with CEQA, the LADWP prepared an IS to determine whether any aspect of the proposed project, either individually or cumulatively, may cause a significant effect on the environment and, if so, to narrow the focus (or scope) of the environmental analysis. The LADWP solicited input from other agencies on the proposed project through the distribution of a NOP. The LADWP filed the NOP and the IS with the State Clearinghouse in the Office of Planning and Research as an indication that an EIR would be prepared. In addition, the NOP/IS was distributed to local agencies and interested parties to solicit comments on the scope and content of the environmental analysis to be included in the EIR. The public was given 30-days to respond, which ended on September 21, 2004; however, the review period was extended to October 18, 2004, to accommodate the City of Burbank. A total of twelve comment letters and emails were received from various State and local agencies during the review period, as well as one additional letter received after the close of the review period. These letters are provided in Appendix A.3. Relevant comments received from agencies that responded to the IS were considered in preparation of the Draft EIR, as appropriate (see Section 5.1).

**Table 1-1. Required EIR Contents**

Requirement (CEQA Guidelines Section)	Location in EIR
Table of contents (§15122)	Table of Contents
Summary (§15123)	Executive Summary
Project description (§15124)	Section 2
Environmental setting (§15125)	Sections 3.1.3, 3.2.3, and 3.3.3
Significant environmental impacts (§15126.2)	Sections 3.1, 3.2, and 3.3
Unavoidable significant environmental impacts (§15126.2)	Section 5.5
Mitigation measures (§15126.4)	Section 3.1.4, 3.2.4, and 3.3.4
Cumulative impacts (§15130)	Section 2.9, 3.1.6, 3.2.6, and 3.3.6
Alternatives to the proposed project (§15126.6)	Section 4
Growth-inducing impacts (§15126.2)	Section 5.2
Effects not found to be significant (§15128)	Section 5.4
Irreversible environmental changes (§15126.2)	Section 5.3
Organizations and persons consulted (§15129)	Section 6
List of preparers (§15129)	Section 8
Citations (§15148)	Section 6
Glossary/Terms/Writing (§15140)	Section 7
Appendices/Technical Detail (§15147)	Appendices

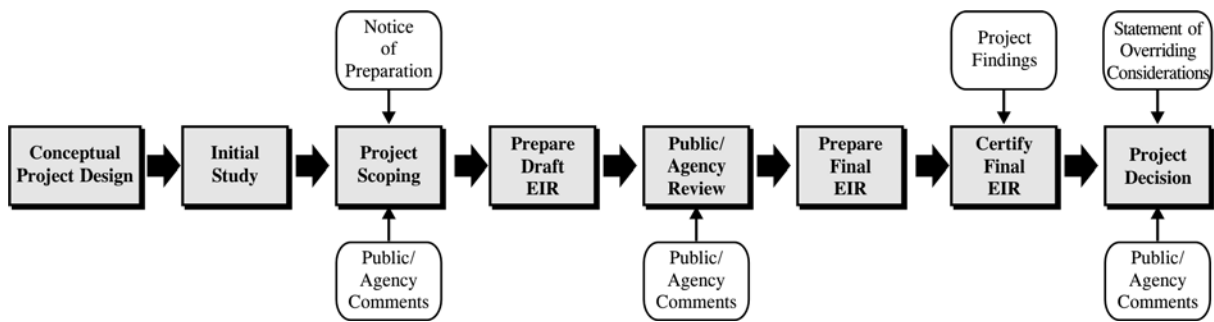
During the preparation of the Draft EIR, agencies, organizations, and persons who the LADWP believes may have an interest in this project were contacted. Information and comments from these contacts have been included in the Draft EIR, as appropriate. Agencies or interested persons will also have an opportunity to comment during the 45-day public review period of the Draft EIR. After the public review period, LADWP will prepare responses to comments received on the Draft EIR and both the comments and the responses will be incorporated into the Final EIR.

If LADWP decides to carry out the proposed project, it first must make written findings addressing each significant impact identified in the Final EIR. These findings must either state that alterations have been made to the project to avoid or substantially reduce each significant impact, or that specific economic, legal, social, technological, or other considerations make mitigation of a significant impact infeasible. A mitigation monitoring

plan must be adopted to ensure that the measures imposed to mitigate or avoid significant environmental impacts are implemented. The Final EIR for this project will include the mitigation monitoring plan for the Lower Reach RSC Project.

If LADWP decides to move forward with the proposed project even though significant unavoidable impacts would occur, LADWP must prepare and adopt a Statement of Overriding Considerations that explains the specific reasons why the benefits of the proposed project make its unavoidable environmental effects acceptable. The statement is prepared, if required, after the Final EIR has been certified, but before action to approve the project has been taken. Figure 1-2 provides a flowchart of the EIR process.

**Figure 1-2. The EIR Process**



**INTENTIONALLY LEFT BLANK**

## 2. Project Description

---

This section describes the Lower Reach River Supply Conduit Project (proposed project or Lower Reach RSC Project) as proposed by the LADWP. The intention of this description is to provide a general overview of the proposed project and to ensure a common understanding of the proposed project for evaluating its environmental effects.

The LADWP proposes to construct a new larger Lower Reach RSC pipeline to replace the Lower Reach of the existing RSC pipeline in a new alignment. The proposed project would involve the construction of approximately 37,400 linear feet (about 7.1 miles, including two branch lines) of 48-, 60-, 66-, 72-, 84-, and 96-inch diameter (LADWP, 2005a) welded steel underground pipeline, and would also include construction of appurtenant structures (e.g., maintenance/access holes, regulator station, flow meters, valves, and/or vaults). Construction of the proposed project pipeline would occur within existing street rights-of-way, LADWP property and easements, or open space/recreation areas within the City of Los Angeles. The project area is shown in Figure 1-1.

### 2.1 Background

The existing RSC is a major transmission pipeline in the LADWP water distribution system. Built in the 1940s, the existing RSC pipeline's purpose is to transport large amounts of water from the Van Norman Reservoir Complex and local ground water wells to reservoirs and distribution facilities located in the central areas of the City of Los Angeles. Approximately 60,000 feet in length, the existing RSC pipeline begins at the North Hollywood Pumping Station (NHPS) and ends at the Ivanhoe Reservoir. Hollingsworth Spillway is located about midpoint along the pipeline and is currently used to control the pressure of the downstream pipeline.

The section of existing RSC pipe north of Hollingsworth Spillway is referred to as the Upper Reach, while the section south is referred to as the Lower Reach. About 70 percent of the pipeline is located in City of Los Angeles streets and property with the remainder located within easements in the City of Burbank. Various pipe sizes and material types were used to construct the existing RSC pipeline. For the Upper Reach, 98 percent of the pipeline is concrete pipe with the remainder being steel. For the Lower Reach, 95 percent of the pipeline is concrete pipe with the remainder being steel.

As the existing RSC has aged, numerous issues regarding the pipeline have emerged. Sections of the existing RSC pipeline are either unpressurized or are at very low pressures. As such, the existing pipeline is below the current requirements of the California Department of Health Services Drinking Water Regulations (Title 22, §64566(c)), which require "water mains to be designed to have at least 5 psig [pounds per square inch gauge] pressure throughout any buried length of the main except when the main is removed from service for repairs or maintenance." These minimum pressures help to prevent cross-contamination from other buried utilities, in particular, sanitary sewers. At the same time, some sections of the pipe are subject to pressures greater than those recommended by the manufacturer. Additionally, over the years, the existing RSC pipeline has experienced cases of pipe leaks. For example, in 2001, leaking pipe joints near the intersection of Los Feliz Boulevard and Riverside Drive were repaired using an internal seal system. Although the leaks were stopped, the seals, which are still in place, were only intended to be a temporary measure.

---

Further impacting the service of the existing RSC, and in order to meet new state and federal water quality regulations, the LADWP is proposing to remove several open-air reservoirs, some of which are destinations for the existing RSC, from direct service to the LADWP water distribution system.

## **2.2 LADWP's Project Objectives**

The existing Lower Reach RSC pipeline, which the proposed project is intended to replace, has provided over 50 years of continuous service to the City of Los Angeles, and its reliability and capacity are near its design life limits. Additional factors contributing to the need for improvements to LADWP's water distribution system include: (1) increased system demand, (2) aged pipeline with history of leaks, (3) California Department of Health Services Drinking Water Regulations, (4) reduced open reservoir storage due to more stringent state and federal water quality regulations, and (5) susceptibility to earthquake and other natural disasters. In addition, the LADWP's water distribution system must be capable of handling system demands, and hydraulic losses must be minimized. Hydraulic losses occur as a result of pipeline friction losses due to the smaller pipe sizes within the existing RSC pipeline system.

To address these issues, LADWP has identified the following objectives for the proposed project:

- Provide a more reliable supply of water to the central area of the City of Los Angeles.
- Provide a larger flow capacity to adequately meet the current water requirements of the City of Los Angeles.
- Provide higher water pressure to meet California Department of Health Services Drinking Water Regulations.
- Compensate for loss of water storage within the LADWP water distribution system.

## **2.3 Project Selection Criteria, Location, and Setting**

In developing the proposed project, the following selection criteria were used to evaluate the various possible routes for the new Lower Reach RSC pipeline:

- Available space in the street to allow for new pipe (avoid existing substructures)
- Avoid large tracts of high-density residential housing, which generate excessive amounts of curbside parking and driveway access.
- Preferentially use primary streets rather than secondary streets, as minor roads are typically too narrow.
- Shortest overall distance to keep project costs down and minimize head losses.
- Avoid overhead obstructions that may conflict with crane and excavator operations.
- Minimize impacts on surrounding community.

Not only were the above selection criteria considered, but scoping comments received during the public review period for the Initial Study (August 23 to October 18, 2004) were also considered in the development of the proposed project alignment (see Appendix A.3). Although there is a need, as outlined in Section 2.2 of this document, to replace both the Upper Reach RSC and the Lower Reach RSC as described in the Initial Study, complications associated with project design, budget considerations, and alignment constraints have pushed the Upper Reach RSC off to sometime in the future. Independent of the Upper Reach RSC, operating constraints due to the physical condition of the Lower Reach RSC dictate that LADWP move forward with the replacement of this section of the pipeline.

---

The new Lower Reach RSC pipeline would be located in public street rights-of-way, LADWP property, and LADWP utility easements in the communities of Silver Lake and Los Feliz (including Griffith Park) in the City of Los Angeles. Figure 1-1 shows an overview of the proposed project alignment. The pipeline would be constructed in an area bounded by U.S. Highway 134 (Ventura Freeway) to the north, U.S. Highway 101 (Hollywood Freeway) to the west and southwest, Interstate 5 (Golden State Freeway) to the east, and State Route 2 (Glendale Freeway) to the southeast (see Section 2.4 for details). The Lower Reach RSC pipeline would be located in the LADWP Central and Western District service areas.

The majority of the northern portion of the Lower Reach RSC pipeline would be located within existing streets within Griffith Park, a 4,000-acre recreation area in the City of Los Angeles. The southern portion of the Lower Reach RSC pipeline would be located within city streets surrounded by urban development including both residential and commercial zones.

## **2.4 Proposed Project**

### **2.4.1 Proposed Pipeline Route**

The proposed Lower Reach alignment for the RSC pipeline is shown in Figure 2-1. Due to the considerable length of the proposed Lower Reach RSC pipeline and to facilitate discussion of the proposed project, the Lower Reach has been divided into units. Table 2-1 describes the five units that make up the Lower Reach RSC pipeline.

The proposed Lower Reach RSC pipeline would involve the construction of approximately 37,400 linear feet (about 7.1 miles, including two branch lines) (LADWP, 2005a) of welded steel pipeline located along/in City of Los Angeles streets and property (see Figure 2-1). Unit 1a begins at the southwest end of the Headworks Spreading Grounds site as a future connection to the proposed Upper Reach RSC project pipeline. The pipeline would be located in the Headworks property, run east parallel to the south property line, exit the site near the intersection of Forest Lawn Drive and Zoo Drive, and then tunnel under and south of the Griffith Park Travel Town area, reaching Zoo Drive west of the L.A. Live Steamers location where Unit 1b begins. A connection to the existing Lower Reach RSC would be made near this location. The pipeline would then continue in Griffith Park and generally travel along Zoo Drive and Crystal Springs Drive. Once exiting Griffith Park at Crystal Springs Drive and Los Feliz Boulevard, the pipeline would continue southerly along Riverside Drive, turning south onto Glendale Boulevard, then southwest on Rokeby Street, then west on Rowena Avenue, and south again onto West Silver Lake Drive until reaching the intersection with Armstrong Avenue, where it would connect to the existing Ivanhoe Reservoir inlet line. Two branch lines would also be constructed. The first would begin south of Los Feliz Boulevard at Riverside Drive, and continue south through Mulholland Memorial Park, before entering the existing Rowena Tunnel to connect to the Rowena Tank. The other branch line would begin at Rowena Avenue and Rokeby Street and continue southeast on Glendale Boulevard and tie into the Fletcher Pump Station suction line at Glendale Boulevard and Fletcher Drive.

**Table 2-1. Summary of Unit Route(s)**

Unit and Location	City	Route
<b>LOWER REACH</b>		
<b>Unit 1a</b> Headworks Property and Griffith Park North	Los Angeles	From the southwest end of the Headworks Spreading Grounds site, continuing through the Headworks property to a location near the intersection of Forest Lawn Drive and Zoo Drive, continuing to Zoo Drive west of the L.A. Live Steamers (children's train ride).
<b>Unit 1b</b> Griffith Park North along Zoo Drive	Los Angeles	From east of Hollingsworth Spillway to L.A. Live Steamers, where Unit 1b connects to Unit 1a, and continuing along Zoo Drive to a location 1,800 feet north of the northerly end of Western Heritage Way.
<b>Unit 2</b> Zoo Parallel Line (Western Heritage Way)	Los Angeles	From the southern end of Unit 1b to approximately 800 feet south of the southern end of Western Heritage Way, running in Western Heritage Way, other paved roads, and equestrian trails.
<b>Unit 3</b> Griffith Park South (Crystal Springs Drive)	Los Angeles	From the southern end of Unit 2 to Los Feliz Boulevard, running in Crystal Springs Drive.
<b>Unit 4</b> Los Feliz/Riverside to Rokeby/Rowena Rokeby/Rowena to Rowena/West Silver Lake Rowena/West Silver Lake to Armstrong/West Silver Lake  <u>Trunk Line Rowena Branch Line</u> Los Feliz/Riverside to Rowena Tank  <u>Trunk Line Fletcher Pumping Station Branch Line</u> Rokeby/Rowena to Fletcher	Los Angeles	From the southern end of Unit 3, southeast in Riverside Drive; turning southerly onto Glendale Boulevard; turning southwest onto Rokeby Street, then westerly onto Rowena; and then south in West Silver Lake Drive to the intersection of West Silver Lake Drive and Armstrong Avenue (connecting to the Ivanhoe inlet line). In addition, two branch lines would be constructed in Unit 4.  The Rowena Branch Line would connect the Lower Reach RSC pipeline to the Rowena Tank. From the intersection of Riverside Drive and Los Feliz Boulevard, south through Mulholland Memorial Park and through the existing Rowena Tunnel to the existing Rowena Tank.  The Fletcher Pumping Station Branch Line would connect the Lower Reach RSC pipeline to the Fletcher Pump Station suction line. From the intersection of Rowena Avenue and Rokeby Street southeast along Glendale Boulevard to Fletcher Drive (connecting to the Fletcher Pump Station suction line).

**2.4.2 Project Components**

**2.4.2.1 RSC Pipeline**

Pipeline construction would be composed of several activities. The construction activities would be organized to proceed in the order listed below.

1. Pre-construction activities
2. Right-of-way clearing
3. Pipeline installation
4. Weld inspection
5. Applying protective coating to the weld joints
6. Backfilling
7. Hydrostatic testing and disinfection
8. Restoring and cleaning of affected construction areas

Once the proposed project is approved and the specific alignment is confirmed, a construction plan would be developed that, among other things, would identify refueling operations. Refueling of construction equipment would take place along the rights-of-way using absorbent material to create temporary berms around the equipment.

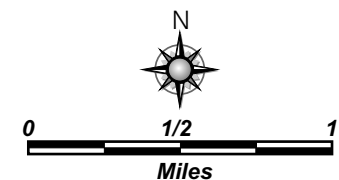
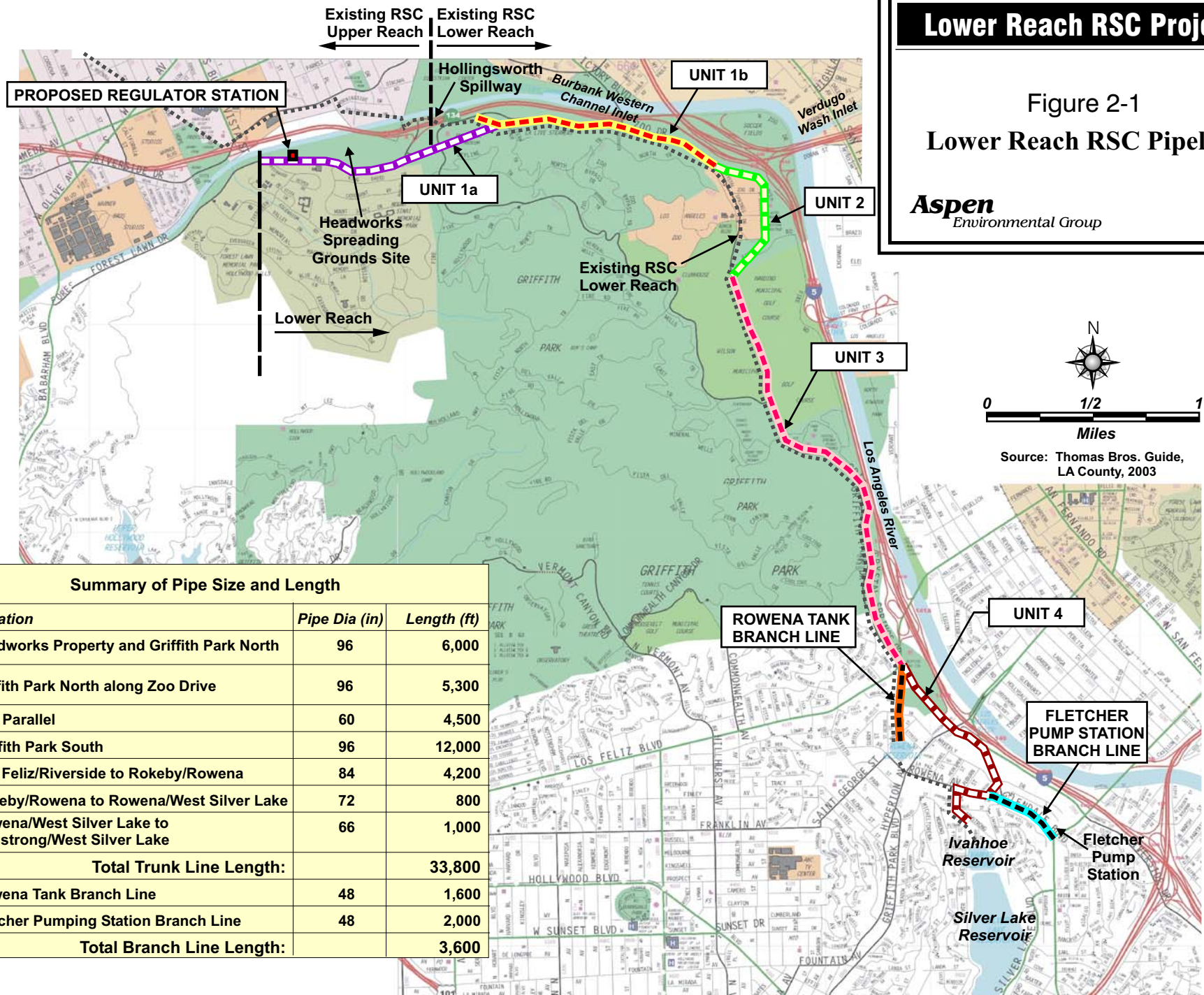
Prior to construction, LADWP's contractor would develop an emergency response plan, spill prevention plan, or similar document. As part of this plan, the LADWP's contractor would be required to have available adequate



# Lower Reach RSC Project

Figure 2-1  
Lower Reach RSC Pipeline

**Aspen**  
Environmental Group



Source: Thomas Bros. Guide, LA County, 2003

Summary of Pipe Size and Length

Unit	Location	Pipe Dia (in)	Length (ft)
1a	Headworks Property and Griffith Park North	96	6,000
1b	Griffith Park North along Zoo Drive	96	5,300
2	Zoo Parallel	60	4,500
3	Griffith Park South	96	12,000
4	Los Feliz/Riverside to Rokeby/Rowena	84	4,200
	Rokeby/Rowena to Rowena/West Silver Lake	72	800
	Rowena/West Silver Lake to Armstrong/West Silver Lake	66	1,000
	<b>Total Trunk Line Length:</b>		<b>33,800</b>
	Rowena Tank Branch Line	48	1,600
	Fletcher Pumping Station Branch Line	48	2,000
	<b>Total Branch Line Length:</b>		<b>3,600</b>

---

**INTENTIONALLY LEFT BLANK**

---

spill containment and cleanup resources on site at all times. The contractor would be prepared to contain, control, clean up, and dispose of any potential fuel spill quickly and completely.

Construction of the proposed project would occur on public property, including street rights-of-way and municipal parks. Installation of the Lower Reach RSC pipeline would be accomplished by a combination of open-trench excavations, jacking, traditional tunneling, and slip lining, as described below under “Pipeline Construction Methods.” In general, deep sections of pipe would be tunneled and street intersections would be jacked or tunneled. For those areas along the pipeline alignment constrained to pipeline depths of 25 feet or less, open-trenching would be used. In sequence, the general process for the construction methods consists of site preparation, excavation, pipe (and/or appurtenant structure) installation and backfilling, and site restoration (where applicable). For tunneling and jacking operations, a pit would be needed at the entrance and exit of each pipe segment to install the pipeline. All these construction methods would require off-site staging area(s) to temporarily store supplies and materials (see “Staging Areas” below).

In the Lower Reach, in jacking areas and certain open trenching areas, it may be required to dive under existing substructures resulting in maximum trench depths of approximately 25 to 30 feet or more. The maximum trench width would be the pipe diameter plus two feet on either side of the pipe for the open trench method; and the maximum pit sizes for jacking/tunneling would be about 18 feet wide by 40 feet long. The overall width, including the work area along the side of the trench, would be approximately 30 to 35 feet.

Lower Reach construction techniques would include approximately (LADWP, 2004a):

- 5,700 feet of tunneling or jacking with steel casing or other tunnel liners for eight (8) tunnels;
- 30,700 feet of open trench excavation; and
- 1,000 feet of slip lining for the branch line to the Rowena Tank.

The Rowena Tank branch line would be constructed using open trench methods through Mulholland Memorial Park south of the William Mulholland Memorial Fountain, before entering the existing Rowena Tunnel (LADWP, 2004a). Only those portions of the park directly affected by the pipeline construction would be closed. The Rowena Tunnel is a circular tunnel, approximately 72-inches in diameter (inside diameter) located within a LADWP easement. The north portal begins approximately 850 feet south of the intersection of Los Feliz Boulevard and Riverside Drive and extends south for approximately 1,000 feet to the south portal. The new Lower Reach RSC pipeline would be installed (sliplined) inside this existing tunnel. Once the new Lower Reach RSC pipeline is installed through the Rowena Tunnel, a connection would be made to the existing Rowena Tank inlet line located in the north corner of the Rowena property, southerly of the intersection of Maxwell Street and Ettrick Street. The branch line to the Fletcher Pump Station suction line would be constructed using the open-trench method.

Both Ivanhoe and Silver Lake Reservoirs would need to be lowered approximately 16 feet for six to eight weeks (under normal weather conditions) to make the connections to the Ivanhoe inlet line and Fletcher Pump Station suction line (LADWP, 2005b). To lower the reservoir levels, water would be served to customers. To control algae growth, the reservoir levels would be lowered during cooler months, which would reduce the likelihood of algae blooms as a result of colder temperatures and less sunlight (LADWP, 2005c). Additionally, shore chlorination would be increased, as necessary, or copper sulfate would be utilized to prevent algae growth

(LADWP, 2005c). Once the connections are completed, it would take approximately two months to refill the reservoirs to normal levels (LADWP, 2005b).

Table 2-2 provides a summary of the proposed pipeline route’s unit details, pipeline length, pipeline diameter and general construction method(s). The activity/pipeline construction methods presented in Table 2-2 are further described under “Pipeline Construction Methods” below.

**Table 2-2. Summary of Unit Characteristics and Construction Method**

Unit No.	Unit Details	Length (Feet)	Pipe Dia. (in)	Proposed Construction Method <sup>b</sup>
<b>LOWER REACH</b>				
1a <sup>a</sup>	Headworks Property and Griffith Park North	6,000	96	Open Trench/Tunneling
1b	Griffith Park North along Zoo Drive	5,300	96	Open Trench
2	Zoo Parallel Line (Western Heritage Way)	4,500	60	Open Trench
3	Griffith Park South (Crystal Springs Drive)	12,000	96	Open Trench/Jacking/Tunneling
4	Los Feliz/Riverside to Rokeby/Rowena	4,200	84	Open Trench/Jacking
	Rokeby/Rowena to Rowena/West Silver Lake	800	72	Open Trench
	Rowena/West Silver Lake to Armstrong/West Silver Lake	1,000	66	Open Trench/Jacking
	<u>Trunk Line Rowena Branch Line</u> Los Feliz/Riverside to Rowena Tank	1,600	48	Open Trench/ Tunneling/ Slip Lining
	<u>Trunk Line Fletcher PS Branch Line</u> Rokeby/Rowena to Fletcher	2,000	48	Open Trench

Source: LADWP, 2004b and 2005a.

Note(s):

a. Proposed regulator station to be constructed as part of Unit 1a.

b. Construction methods are to be finalized by the construction contractor.

#### 2.4.2.2 Proposed Regulator Station

Pressure regulating stations are used in water supply systems to control pressure in the pipelines. A typical station is located in an underground vault and consists of several parallel pipes, or legs, that branch off the main pipeline. These pipe legs are smaller than the main pipeline and have regulator valves installed, which control pressure by how much the valve is opened or closed. Ancillary equipment is also required for the vault and may include lines valves, power, ventilation, and pumps. Additionally, a relief station consisting of a vault and valve system in an underground vault is needed in the event that the regulator valve fails. The relief valve would open to control the downstream pipe pressure.

As part of the Lower Reach RSC pipeline construction, a regulator station would be built underground inside a vault, with approximate dimensions of 45 feet by 25 feet, within the Headworks Spreading Grounds site. This station would consist of approximately five smaller pipe legs (two 24-inch and three 16-inch legs). Each pipe leg would have a control valve, which would be operated as necessary to maintain the pressure requirements downstream within the Lower Reach RSC pipeline.

#### 2.4.2.3 Appurtenant Improvements

The Lower Reach RSC pipeline would also include construction of appurtenant structures as follows:

- Vaults and ventilation stacks
- Pipeline valves, air vacuum valves, and air release valves
- Maintenance and access holes
- Blow offs
- Flow meters
- Cathodic Protection System and test stations
- Electrical and mechanical cabinets

---

#### 2.4.2.4 Abandonment of Existing Lower Reach RSC Pipeline

The existing Lower Reach of the RSC pipeline, from the Hollingsworth Spillway Structure to the Silver Lake Reservoir Complex, is in poor condition and would be abandoned and backfilled pursuant to applicable regulations (LADWP, 2004a). Abandoned sections would also be slurried, which would require approximately 14,630 cubic yards of slurry material (LADWP, 2004b). Slurry operations are expected to be limited to about 200 to 300-foot sections, which is about the most LADWP could slurry in a single day (LADWP, 2004b). Access to the pipe would be needed at each end, and also somewhere in between (at the high point in the pipe) to vent air. The existing pipe is relatively shallow, but a construction crew would still need pavement breaking and repair equipment (saw cutter, backhoe, dump truck, compaction roller, etc.) to complete the work. Slurry operations would require several concrete mix trucks, as the quantity of slurry required amounts to approximately 1,626 trips (assumes truck capacity of nine cubic yards). The majority (90%+) of the existing Lower Reach of the RSC pipeline is located in city streets and in Griffith Park along Crystal Springs Drive.

### 2.5 Project Specifics

#### 2.5.1 Construction Schedule, Planning, and Labor Force

As shown in Table 2-3, construction of the proposed project would be expected to commence in October 2005 with the majority of work being completed by September 2008, for a total of 35 months (approximately 3 years). Slurrying would begin after construction of Units 1b, 3 and 4 have been completed. Slurrying of the existing RSC between the Hollingsworth Spillway Structure and Unit 1b would occur after the Headworks Reservoir construction is completed, which is estimated to occur in late 2011 (LADWP, 2004b)<sup>2</sup>. Unit 2 would be constructed beginning in February 2016, long after the completion of Units 1a, 1b, 3 and 4.

**Table 2-3. Proposed Construction Schedule**

Unit	Start Date	Completion Date	Estimated Duration (Days)
1a <sup>a</sup>	January 2007	September 2008	423
1b	October 2005	December 2006	310
2	February 2016	March 2017	290
3	October 2005	December 2007	567
4	October 2005	December 2007	567

Source: LADWP, 2005a.

Note(s):

a. Proposed regulator station to be constructed as part of Unit 1a. Unit 1a would become operational upon completion of the Headworks Reservoir.

Approximately 50 percent of the workforce would be skilled labor, and 50 percent would be unskilled labor, as shown in Table 2-4. As a worse-case scenario, up to four open trench and three jacking operations are anticipated to occur simultaneously over four pipeline units (e.g. Units 1a, 1b, 3, and 4) during the peak construction period (LADWP, 2004c). Therefore, approximately 100 personnel (22 employees times four open trench activities, plus four employees times three jacking operations) would be employed on the project during the peak construction

---

<sup>2</sup> An EIR is being prepared for the Silver Lake Reservoir Complex Storage Replacement Project by the LADWP, which includes the construction of the Headworks Reservoir. Information for this project is available at the following website: <http://www.silverlakestoragereplacement.com/home/index.htm>.

period. On a typical workday, workers would travel directly to one of the predetermined staging areas, where they would gather equipment and proceed in work crews to the construction sites along the alignment. Construction activities would involve several (up to 83 assuming a 1.2 rideshare/other transportation factor) construction worker vehicles traveling daily to and from the proposed pipeline alignment from the nearest LADWP facility. Additional truck trips would be needed to transport unused excavated soil from trenching to an appropriate facility for reuse or ultimate disposal.

Construction would generally occur between 7:00 a.m. and 6:00 p.m. Monday through Friday (10-hour work day) and 8:00 a.m. to 5:00 p.m. on Saturdays (8-hour work day). Within Griffith Park, on Crystal Springs Drive where the road is open to two-way traffic, construction may be limited to nighttime hours only. Day and/or night construction (up to 24 hours per day with police approval) would occur within Griffith Park along Crystal Springs Drive, where the road is open to only one-way traffic, since the lower portion of Crystal Springs Drive would be entirely closed throughout construction within that area (Department of Recreation and Parks approval would be required). Installation of pipe would be expected to progress at approximately 80 to 120 feet per day in this area, assuming a 24-hour construction schedule.

It is estimated that a typical construction activity would require the closure of three travel lanes (LADWP, 2004a). Intersections where open trench construction is used would be affected for approximately four weeks with turning traffic affected considerably longer (LADWP, 2004a). Table 2-4 provides a description of personnel, equipment, and refueling required for each activity.

**Table 2-4. Personnel, Equipment, and Refueling Requirements**

Activity <sup>a</sup>	Personnel		Equipment		Refueling
	Skilled	Unskilled	Quantity	Type	
Open Trench	11	11	5	Pickups	Off-site
			1	Service truck	Off-site
			1	Backhoe	On-site
			6	Dump trucks	Off-site
			1	Welding trucks	Off-site
			1	Pitman	Off-site
			1	Crane	On-site
			1	Wheel loader	On-site
			1	Compactor	On-site
			1	Fork lift	On-site
			1	Water truck	Off-site
			1	Excavator	On-site
Jacking	2	2	2	Pickups	Off-site
			1	Dump trucks	Off-site
			1	Excavator	On-site
			1	Crane	On-site
Tunneling	2	4	2	Pickups	Off-site
			1	Dump trucks	Off-site
			1	Excavator	On-site
			1	Crane	On-site
Pipe Delivery (40 ft/load)	2	0	2	Trailer truck	Off-site

Source: LADWP, 2004a.

Note(s):

a. The activity/pipeline construction methods presented are further described under "Pipeline Construction Methods."

---

### 2.5.2 Staging Areas

During pipeline construction, LADWP's construction contractor would establish temporary yard locations for staging and storage of miscellaneous construction materials and equipment. The contractor(s) would be responsible for scouting and securing suitable local lots for staging areas (LADWP, 2004a). However, possible staging areas identified for the proposed project include various City-owned lots in Griffith Park, or at local LADWP facilities, such as the Silver Lake Reservoir Complex.

During all phases of construction, refueling and lubrication of construction equipment would occur at the contractors' staging yard or along the construction right-of-way. Equipment would be regularly checked for leaks.

### 2.5.3 Construction Sites

Most of the heavy construction equipment would be delivered on trucks or trailers. Mobile cranes and dump trucks would be driven in from local contractors' yards. Construction equipment would be left overnight at the site as feasible, at the contractor yards, or at other storage yards in the area. All equipment would be lubricated, refueled, and repaired by the contractor or local servicing companies.

All construction materials would proceed to the construction areas by truck on existing roadways. For pipe delivery by truck, it is assumed that each truck would carry 40-feet of pipe. Materials that would be truck transported to the site would include: the pipe sections, pipe fittings, valve assemblies, and shoring materials; welding materials; cement, aggregate, gravel, sand, and slurry (from local plants) for backfill; asphalt for repaving; signs and fencing; fuel and lubrication for equipment; drinking water; and water for dust control. Alternatively, water may be available from fire hydrants or permitted water sources in the project area for hydrotesting and dust control. The amounts of each material needed would depend on the location and construction activity.

### 2.5.4 Waste Management

Generally, waste generation from construction would be in the form of short sections of pipe, welding, and coating as well as boxes and crates used in the shipment of materials. These materials would be sorted by metal or non-metal and typically would be hauled to local waste disposal centers. Other construction wastes would include contaminated soil that cannot be returned to the trench as backfill; rubble from trenching paved areas; and water used to hydrostatically test<sup>3</sup> the pipeline. Non-hazardous wastes would be hauled to a sanitary landfill; hazardous wastes would be sent to a permitted treatment or disposal facility; and used hydrostatic test water would be treated to meet the requirements of the National Pollutant Discharge Elimination System (NPDES) hydrostatic test permit and discharged into nearby storm drains, or discharged to sewer drains within the City of Los Angeles consistent with the requirement of the Bureau of Sanitation. Construction crews would use portable chemical toilets, and trash containers would be provided at each yard for daily refuse from construction workers.

---

<sup>3</sup> A hydrostatic test involves filling a test section of the pipeline with fresh water and increasing pressure to a predetermined level. Such tests are designed to prove that the pipe, fittings, and weld sections would maintain mechanical integrity without failure or leakage under pressure.

---

## 2.5.5 Utility and Services Requirements

Construction equipment would require both gasoline and diesel fuel. All construction equipment would be fitted with appropriate mufflers and all engines would be maintained regularly. Welding machines would use diesel or unleaded fuel.

Water would be used as necessary to control fugitive dust and to wash streets as a supplement to sweeping streets. In addition to the daily construction water needs, hydrostatic testing of the pipeline would also require water. Hydrostatic test water would be obtained from LADWP. For the Lower Reach, approximately 11.5 million gallons of hydrostatic test water would be used for testing five units (Unit 1a, 1b, 2, 3, and 4) with a maximum discharge on the order of 4.2 million gallons over seven days. Hydrostatic test water would be pumped from the pipeline and allowed to gutter flow to the nearest storm or sewer drain.

Construction along the proposed Lower Reach pipeline route would require onsite diesel fuel generators for the temporary supply of electricity. Together the main pipeline activities and street work would have approximately 15 pick-up mounted welding machines, each with its own generator. In addition, utility generators would also be used for the intermittent operation of dewatering pumps, hydraulic equipment, grinders, sandblasters, temporary lights, etc.

## 2.6 Pipeline Construction Methods

### 2.6.1 Open Trench Excavation

Open trench excavation is a construction method typically utilized to install pipelines and their appurtenant structures, which include maintenance holes, flow meters, valves, and vaults. In general, the process consists of site preparation, excavation and shoring, pipe installation and backfilling and site restoration (where applicable). The proposed project would be phased in work areas and each work area would typically vary between 800 and 1,000 feet within an approximately 1,400 foot construction zone. Within each work area, construction usually progresses along the alignment with the maximum length of open trench at one time being approximately 500 feet in length. Traffic detours would begin at least 200 feet on either side of the work area (LADWP, 2004a). The following is a description of the phases of construction for open trenching:

*Site Preparation.* Traffic control plans, where necessary, are first prepared in coordination with the City of Los Angeles Department of Transportation to detour and delineate the traffic lanes around the work areas. The approved plans are then implemented. The existing pavement along the pipeline alignment is cut with a concrete saw or otherwise broken and then removed using jackhammers, pavement breakers, and loaders. Other similar equipment may be used. The pavement is removed from the project site and recycled, reused as a backfill material, or disposed of at an appropriate facility.

*Excavation and Shoring.* A trench is excavated along the pipeline alignment using backhoes, excavators, or other types of excavation equipment. Portions of the trench adjacent to some utilities may be manually excavated. The excavated soil may be temporarily stored in single rows adjacent to the trenches, stored at off-site staging areas, or immediately hauled off-site. As the trench is excavated, the trench walls are supported, or shored, typically with hydraulic jacks or trench boxes. Steel or wood sheeting between H-beams (e.g., beam and plate) may also be used for shoring. Other similar shoring methods may be utilized. Utilities not relocated prior to trenching are supported as excavation and shoring occurs.



---

If construction occurs in areas with high groundwater, the groundwater would be removed during the excavation of trenches, usually by pumping it from the ground through dewatering wells that have been drilled along the alignment. The extracted groundwater would first be treated for any contaminants, if present, before being discharged to the storm drain system under a permit issued by the Regional Water Quality Control Board.

*Pipe Installation and Backfilling.* Once the trench has been excavated and shored, pipe laying begins. Bedding material (such as sand or slurry) would be placed on the bottom of the trench. Pipe segments would then be lowered into the trench and placed on the bedding. The segments would be welded to one another at the joints. The rate at which pipe may be installed in a single day varies, but is estimated to be installed at a rate of approximately 80 feet per day for the proposed project (LADWP, 2004a). Prior to backfilling, appurtenant structures would be installed as necessitated by design. After laying and attaching the pipe segments, the trench is immediately backfilled with native soils, crushed miscellaneous bases, or cement slurry. Not more than 500 feet of trench or the amount of the trench that can be backfilled in one day is left unbackfilled.

*Site Restoration.* Any portion of the roadway damaged as a result of construction activities will be repaved and restored in accordance with all applicable City of Los Angeles standards. Once the pavement has been restored, traffic delineation (restriping) will also be restored.

## **2.6.2 Jacking Method**

Pipe-jacking is utilized when open-trenching is not feasible, to avoid large substructure utilities, or to avoid the disruption of other facilities such as busy intersections. Although the installation of pipelines using jacking techniques avoids the continuous surface disruption common to open-trench construction, some surface disruption is unavoidable because jacking and receiving pits are required and may be located in street rights-of-way.

Pipe-jacking is an operation in which the soil ahead of the steel casing is excavated and brought out through the steel casing barrel while the casing is pushed forward by a horizontal, hydraulic jack which is placed at the rear of the casing. The jacking equipment utilized for this operation is placed in the jacking pit. Once the casing is placed, the pipe is installed inside the casing.

As with open trench excavation, the four primary phases for pipe-jacking are site preparation, excavation and shoring, pipe installation, and site restoration.

*Site Preparation.* Traffic control plans, where necessary, are first prepared in coordination with the City of Los Angeles Department of Transportation, to detour and delineate the traffic lanes around the work areas and then implemented. In preparing to construct the jacking and receiving pits, the pavement is first cut using a concrete saw or pavement breaker. As with open-trench excavation, the pavement is removed from the project site and recycled, reused as a backfill material, or disposed of at an appropriate facility.

*Excavation and Shoring.* A jacking pit and a receiving pit are generally used for each jacking location, one at each end of the pipe segment. The distance between the pits typically ranges from 250 to 500 feet, but may be longer or shorter depending on site conditions.

For the proposed project, the size of the jacking and receiving pit for the Lower Reach would be approximately 20-40 feet long, 11-18 feet wide, and 25-45 feet deep (LADWP, 2004a). The pits are excavated with backhoes,

---

cranes, and other excavation equipment. The excavated soil is immediately hauled away. As excavation occurs, the pits are shored utilizing a beam and plate shoring system.

*Pipe Installation.* Once the pits are constructed and shored, a horizontal hydraulic jack is placed at the bottom of the jacking pit. The steel casing (Lower Reach: 78-, 96-, 108-, and 120-inch internal diameter (LADWP, 2004a)) is lowered into the pit with a crane and placed on the jack. A simple cutting shield is placed in front of the pipe segment to cut through the soil more easily. As the jack pushes the steel casing and cutting shield into the soil, soil is removed from within the leading casing with an auger or boring machine, either by hand or on a conveyor. Once the segment has been pushed into the soil, a new segment is lowered, set in place, and welded to the casing that has been pushed. Installation of the steel casing is expected to progress at approximately 40 feet per day for auger-bored jacked casing. Once the casing has been installed, the carrier pipe (Lower Reach: 66-, 84-, and 96-inch diameter (LADWP, 2004a)) is then lowered and placed on the jacks, which push the pipe into the steel casing. Installation of carrier pipe is expected to progress at approximately 40 to 60 feet per day.

*Site Restoration.* After completion of the pipe installation along the jacking location, the shoring system is disassembled as the pits are backfilled, the soil compacted and the pavement above replaced. Once the pavement has been restored, traffic delineation (restriping) will also be restored.

### **2.6.3 Traditional Tunneling**

Traditional tunneling involves the placement of the pipeline in an underground tunnel, which is excavated between two or more shafts. Traditional tunneling consists of the excavation of shafts, the excavation of tunnels, the installation of the pipeline, and site restoration.

*Shaft Excavation.* Two or more shafts are constructed as described previously for pipe-jacking.

*Tunnel Excavation.* Once the access shafts are excavated and shored, a tunnel is excavated between the shafts. Excavation of the tunnel occurs either with the use of a tunnel shield or manually with small power tools. In large tunnels, rail cars or augers are typically used to transport the excavated soil to one of the shafts. Manual excavation is typically used for shorter tunnels. As the excavation progresses, tunnel supports are constructed, assembled, and installed to prevent the tunnel from caving in. The removed soil is reused, recycled, or hauled away to a disposal site or staging area. The tunneling process proceeds until a fully supported tunnel has been constructed. Typical tunnel supports include steel or pre-cast concrete linings. Support linings are lifted into the proper position and bolted or otherwise fixed in place. Installation of tunnel liner is expected to progress at a maximum rate of 20 feet per day.

*Pipe Installation.* The pipeline is installed in segments following completion of the tunnel. Each pipe segment is lowered into the pit with cranes or other loading equipment, mechanically pushed, carried, or hauled into the proper position within the tunnel, and placed on supports that allow for adjustments in the pipe's alignment. The joints of adjoining pipe segments are welded as pipe placement occurs. Once the entire length of pipe has been placed in the proper position and the joints welded, the annular space between the pipe and the tunnel wall (supports) is completely filled with grout or concrete and allowed to cure. Installation of pipe is expected to progress at a rate of approximately 40 to 60 feet per day.

*Site Restoration.* After completion of the pipe installation along the tunneling alignment, the shoring system is disassembled as the pits are backfilled, the soil compacted and the pavement above replaced. Once the pavement has been restored, traffic delineation (restriping) will also be restored.

---

During construction, fugitive dust emissions at the construction site during earthmoving operations would be controlled as needed by water trucks equipped with spray nozzles.

Spoils from cuts, including cuts in streets, would typically be used as backfill materials at the site of origin. Materials unsuitable for backfill use and economically not usable for other purposes would be disposed of in accordance with local and county guidelines in available landfills. It is possible that contaminated soil would be excavated during construction, especially in older industrial areas with shallow groundwater. Soil that cannot be returned as backfill would be disposed of or treated at an appropriate permitted facility.

#### **2.6.4 Slip Lining**

The slip lining method involves the placement of pipeline in an existing pipe or tunnel. If high-density polyethylene (HDPE) pipe is used to slip line, then sections of HDPE pipe are butt-fused together. The fused sections are then pulled/pushed through the existing tunnel. The space between the tunnel and pipe are then filled with grout (LADWP, 2004b).

### **2.7 Operation and Maintenance**

#### **2.7.1 System Operation**

From the connection to the existing Lower Reach RSC, water would flow by gravity to the Silver Lake Reservoir service area and Rowena Tank. Operation of the proposed Lower Reach RSC pipeline would be controlled by the Los Angeles Water System Data Acquisition and Control (LAWSDAC) and manually controlled when needed. Standard safety, operation, and maintenance appurtenances would include maintenance holes, isolation valves, regulator valves, blowoffs, and air and vacuum valves (LADWP, 2004a).

#### **2.7.2 System Inspection and Maintenance**

Periodically, water utility crews would perform an inspection on the isolation, air, and vacuum valves. When appropriate, water utility crews would also exercise the isolation valves (LADWP, 2004a).

#### **2.7.3 Emergency Response**

Emergency response procedures for the new Lower Reach RSC pipeline would include (LADWP, 2004a):

- LAWSDAC identifies problem or an individual informs LAWSDAC personnel.
- LAWSDAC automated response or LAWSDAC personnel contacts appropriate managers and operations personnel who would then do the following:
  - Isolate damaged pipeline sections and provide alternate source of supply to affected areas.
  - Repair damaged pipeline section(s).

### **2.8 Cumulative Projects**

CEQA Guidelines §15130 requires a discussion of the cumulative impacts of a project when the project's incremental effect is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. When an incremental effect is not "cumulatively considerable," a lead agency need not consider that effect significant. The CEQA Guidelines

---

require the discussion to reflect the severity of the impacts and the likelihood of their occurrence, but need not provide as much detail as the discussion of impacts attributed solely to the proposed project. If the project's cumulative environmental impacts are not found to be significant, the discussion is required to briefly support these findings.

CEQA Guidelines §15130 also require the use of one of the following methods for adequately evaluating the cumulative impacts of the proposed project:

- A summary of growth projections in an adopted general plan or in a prior certified environmental document; or
- A compiled list of past, present, and probable future projects producing related or cumulative impacts.

For the purposes of this Draft EIR, a list of past, present, and future projects has been used to evaluate cumulative impacts. This cumulative project list includes projects that are either reasonably foreseeable or are expected to be constructed or operated during the life of the proposed project. This list was developed in consultation with the following agencies:

- City of Burbank (City of Burbank, 2004a and 2004b)
- City of Glendale Redevelopment Agency (City of Glendale, 2004)
- California Department of Transportation (Caltrans, 2004)
- City of Los Angeles Community Redevelopment Agency (CRA, 2004)
- City of Los Angeles, Department of Building and Safety (LADBS, 2004)
- City of Los Angeles, Department of Public Works, Bureau of Sanitation (LADPW, 2004)
- Los Angeles Department of Transportation (LADOT, 2004)

These agencies were requested to provide information on all projects that are being considered within their jurisdiction. Any current or future projects identified by one of the above agencies, which is expected to occur within approximately 2.5 miles of the proposed project alignment, is listed in Table 2-5 and shown in Figure 2-2.

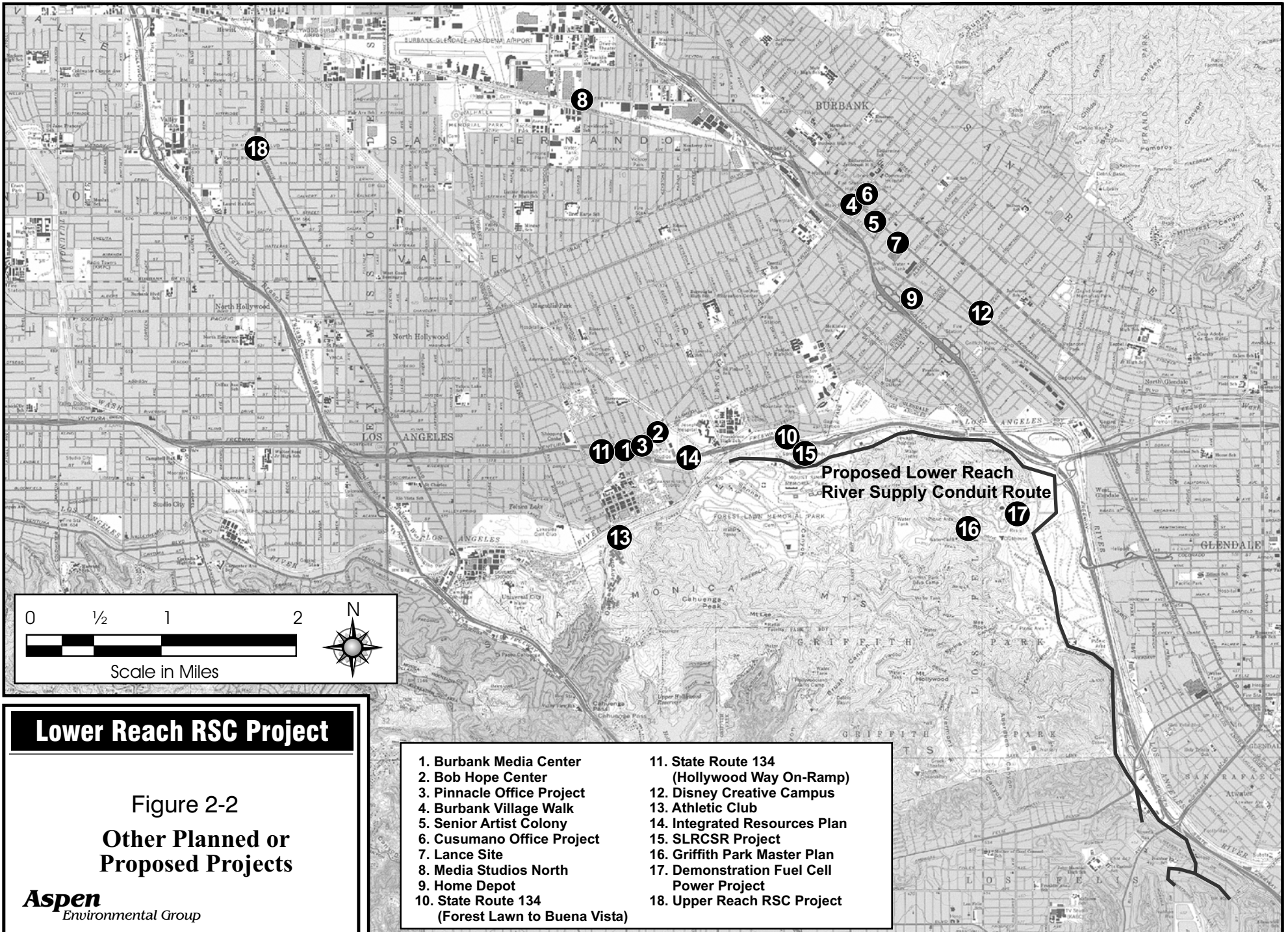
The proposed project may contribute to cumulative impacts during construction of the Lower Reach RSC pipeline. The majority of construction of the proposed project is expected to occur over a 35-month period (~3 years), and is tentatively scheduled from October 2005 to September 2008. Slurrying would begin after construction of Units 1b, 3 and 4 have been completed; however, slurrying of the existing RSC between Hollingsworth Spillway and Unit 1b would occur after the Headworks Reservoir construction is completed, which is estimated to occur in late 2011 (LADWP, 2004b). Unit 2 would be constructed beginning in February 2016, long after the completion of Units 1a, 1b, 3 and 4. Cumulative impacts associated with construction and operation of the proposed project are discussed under each issue area (see Sections 3.1.6, 3.2.6, and 3.3.6).

**Table 2-5. Related Projects**

	Name	Agency/ Project Type	Description	Location	Status
	<b>City of Burbank</b>				
1	Burbank Media Center (Platt) Project	City of Burbank Planning Division / Land Development – Mixed Use	Five development scenarios are proposed for a 3.8-acre site in the City of Burbank. Similar amounts of commercial, residential, and institutional uses are included in Scenarios 1, 2, and 4. Scenario 3 contains only media office and restaurant space. Scenario 5 includes no office space, primarily residential uses, other commercial uses, a church, and a day care center. The applicant is requesting approval of a Planned Development Application to allow development of either Scenario 2 or 5 on the site.	Located in southwestern Burbank between Olive Avenue, Lima Street, Alameda Avenue, and the Ventura Freeway (SR-134) off-ramp. Within the City of Burbank Media District Specific Plan Area.	The public review period for the Draft EIR was completed July 12, 2004. Construction activities are expected to occur in three major phases beginning in January 2005 and ending in July 2008.
2	Bob Hope Center	City of Burbank Planning Division / Land Development – Mixed Use	The site is entitled for a 103,000 square foot office building and a 20,000 square foot live performing arts theater and museum situated above a 318-space, three level subterranean parking garage.	Located within the West Olive redevelopment area of the City of Burbank, between Olive Avenue, Alameda Avenue, and Lima Street.	Planned Development approved on May 22, 2001. No construction schedule is available.
3	Pinnacle Office Project	City of Burbank Planning Division / Land – Office Building	The 395,000-sq. ft. building is the first of two phases that would add a total of 585,000 sq. ft. of office space to the Media District. Phase I was completed in 2003. Phase II proposes to add 200,000 square feet of office spaces.	The Pinnacle Office project is located at 3400 West Olive Avenue by the 134 freeway in the City of Burbank.	No construction schedule is available
4	Burbank Village Walk	City of Burbank Planning Division / Land – Mix Use	Burbank Village Walk would be comprised of 140 for-sale condominium residential units with 14,000 sq. ft. of restaurant/retail space.	The Burbank Village Walk would be located in downtown Burbank, across the street from City Hall.	Proposed project is scheduled to be completed by January 2006.
5	Senior Artist Colony	City of Burbank Planning Division / Land – Senior Housing	The Senior Artist Colony is a 141-unit senior housing project designed to provide facilities for active seniors who have an interest in the arts. Specific project amenities include a clubroom, theater/auditorium, outdoor performance area, studio space/workshops, library, game room and fitness area.	The proposed project would be located on the corner of San Fernando Boulevard and Verdugo Boulevard, in the City of Burbank.	The project's estimated completion date is January 2005.
6	Cusumano Office Project	City of Burbank Planning Division / Mix Use	The proposed project would develop 76,000 sq. ft. of office space, 12,000 sf.ft of restaurant and 8,500 sf. ft. of outdoor café.	The proposed project would be located at the southwest corner of Olive Avenue and Third Street.	A Mitigated Negative Declaration was adopted on February 11, 2003. Project is expected to be completed by mid-winter of 2005.
7	Lance Site	City of Burbank Planning Division / Residential	A 33-unit residential condominium complex is proposed at the former Lance Site. The proposed project would also create a pedestrian friendly environment along San Fernando Boulevard.	The proposed project would be located at 700-722 South San Fernando Boulevard, in the City of Burbank.	A Negative Declaration was adopted and project was approved on August 8, 2004. Project is expected to be completed fall 2006.

	Name	Agency/ Project Type	Description	Location	Status
8	Media Studios North	City of Burbank Redevelopment Agency / Office Building.	The proposed project would build 625 sq. ft. of office space.	The proposed project would be located on Ontario Street and Empire Avenue, in the City of Burbank.	Project is expected to be built out by 2010.
9	Home Depot	City of Burbank Redevelopment Agency / Retail	The proposed project would build a Home Depot Center.	The Center would be located at 1200 South Flower Street, in the City of Burbank.	The proposed project was issued a grading permit in September 2004. No construction schedule is available.
10	State Route 134 – From Forest Lawn Dr. to Buena Vista St.	Caltrans / Soundwall Project	Caltrans is currently constructing a one-half mile soundwall project to reduce noise generated by freeway traffic. Intermittent lane closure will be performed during construction of the soundwall.	The current soundwall project is located along State Route 134, in the City of Burbank, from Forest Lawn Drive to 0.3 miles east of Buena Vista Street.	Construction activities are currently underway, and are expected to be completed by February 2005.
11	State Route 134 – Hollywood Way On-Ramp	Caltrans / On-Ramp Construction	Project construction would include a new Hollywood Way on-ramp to State Route 134 – westbound, retaining walls and soundwalls along the realigned off-ramp and ramp, and the lengthening of the Hollywood Way overcrossing.	The project would be located within the City of Burbank, at the Hollywood Way on-ramp.	Construction is scheduled to begin Spring 2006 and estimated to end in 2007.
<b>City of Glendale</b>					
12	Disney Creative Campus – GC3	City of Glendale Redevelopment Agency / Landscape Creative Campuses	The Grand Central Creative Campus (GC3) project consists of developing the 125-acre site into a series of landscaped creative campuses. The proposed project will replace existing improvements and involve construction of up to 3.57 million square feet of additional space resulting in an overall potential of 5.95 million square feet of new and rehabilitated development.	The proposed project would be located along the San Fernando Road Corridor, at the intersection of Western Avenue in the City of Glendale.	EIR was certified in 2000. Build out is expected over a 30 year period with the first phase, to begin no later than December 2004.
<b>City of Los Angeles</b>					
13	Athletic Club	City of Los Angeles, Department of Building and Safety / Commercial	The proposed project would expand the Athletic Club by approximately 8,700 sf. ft.	The proposed project would be located at 6711 Forest Lawn Drive, in the City of Los Angeles.	Building permit finalized in 2003. Project completion expected by winter 2004.

	Name	Agency/ Project Type	Description	Location	Status
14	Integrated Resources Plan (IRP)	City of Los Angeles, Department of Public Works, Bureau of Sanitation / Infrastructure	The IRP incorporates four (4) alternatives comprised of a suite of wastewater treatment, wastewater conveyance, urban runoff management, and potential water recycling components.	The proposed project would be located throughout the City of Los Angeles and outlying areas. Several of the alignments under study would extend under or near the proposed Lower Reach RSC alignment; however, the sewer line would be at deeper depths than the new Lower Reach RSC pipeline. Major IRP facilities could be located in Playa del Rey, the Sepulveda Flood Control Basin, northeast Los Angeles, and the Cities of Glendale, Burbank, and El Segundo.	Notice of Preparation and Initial Study issued for public review on July 20, 2004. LADWP will coordinate with the City of Los Angeles Department of Public Works on the design to prevent conflicts with the Lower Reach RSC Project. The selected IRP alternative would be implemented over the next 20 years, with individual components implemented, as demand requires.
15	Silver Lake Reservoir Complex Storage Replacement (SLRCSR) Project	Los Angeles Department of Water and Power	Water storage currently provided by the Silver Lake Reservoir Complex would be replaced by an underground covered storage reservoir at the former Headworks Spreading Grounds site.	The proposed project would be located at the former Headworks Spreading Grounds site adjacent to RSC Unit Ia.	An EIR is being prepared for this project. Additional information is available at the following website: <a href="http://www.silverlakestoragereplacement.com/home/index.htm">http://www.silverlakestoragereplacement.com/home/index.htm</a>
16	Griffith Park Master Plan	City of Los Angeles Department of Recreation and Parks	The 1978 Griffith Park Master Plan is being updated in 2005. Updates include current planning improvements to Griffith Park.	Located in Griffith Park, Los Angeles, CA.	A Draft Griffith Park Master Plan was completed in October 2004. The most current version is available at the following website: <a href="http://www.laparks.org/dos/parks/griffithPK/gp_masterplan.htm">www.laparks.org/dos/parks/griffithPK/gp_masterplan.htm</a>
17	Demonstration Fuel Cell Power Project	Los Angeles Department of Water and Power	Fuel cell project, which includes 200 kilowatts generation capacity connected to a power grid.	Located east of the Los Angeles Zoo main entrance adjacent to the Los Angeles Unified School District North Hollywood High School Biological Sciences/Zoo Magnet Center.	The LADWP Board has approved the project and engineering is currently underway. Construction is scheduled for June 2005 and would last 6-7 weeks.
18	Upper Reach RSC Project	Los Angeles Department of Water and Power	The existing proposed project would replace the current Upper Reach of the existing RSC pipeline. The Upper Reach RSC pipeline would tie into the proposed new Lower Reach RSC.	The proposed pipeline would begin at the North Hollywood Pump Station in North Hollywood and travel south to the Headworks Spreading Grounds site located south of U.S. Highway 134 and west of Griffith Park.	An Initial Study for the Upper Reach RSC pipeline was issued in conjunction with the Lower Reach RSC pipeline in August 2004. A Draft EIR has not been prepared. Construction is scheduled to begin in October 2007.





## 2.9 Intended Uses of the EIR and Other Public Agency Actions

This EIR is intended to provide environmental review for the proposed project pursuant to the requirements of CEQA. The Final EIR must be certified by the LADWP as to its adequacy in complying with the requirements of CEQA before any action is taken to approve the proposed project. The LADWP must consider the information contained in the Final EIR in making a decision to approve the proposed project. In addition to LADWP's approval, the proposed project would be subject to the agency permits and approvals listed in Table 2-6. The Final EIR is intended to provide CEQA review for all required permit and approvals needed to construct, operate, and maintain the proposed project.

**Table 2-6. Required Permits and Approvals**

Agency/Department	Permit/Approval	Description
<b>State of California</b>		
Division of Occupational Safety and Health (Formerly CAL OSHA)	Construction Permit	A permit is required for construction of trenches or excavations which are five (5) feet or deeper and into which a person is required to descend.
Regional Water Quality Control Board (RWQCB)	NPDES Permit for construction dewatering	RWQCB approval is needed for general construction runoff and/or construction dewatering discharges under the National Pollutant Discharge Elimination System (NPDES).
	NPDES Permit for hydrostatic test water discharge	Approval is needed for discharge of hydrostatic test water into any surface water of the State of California.
	Groundwater Permit	Section 402 of the Clean Water Act of 1977, as amended (33 U.S.C. 1342 et seq.) requires a NPDES permit (No. CAG994001) for Groundwater Discharges Associated with Construction Activities to regulate discharges of treated groundwater from construction and other projects dewatering to surface waters in the Region.
California Department of Transportation (Caltrans)	Encroachment Permit	An Encroachment Permit is required for trenching activities near State Route 134 on-and-off ramps at Interstate 5 (I-5).
<b>County of Los Angeles</b>		
Department of Public Works	Excavation Permit	Excavation Permits are necessary when any portion of the road right of way, from property line to property line, is cut for the purpose of laying down utility lines, installing electrical cabinets, installing poles or constructing manholes. In addition, this permit is needed to excavate under the Los Angeles River.
	Encroachment Permit	Encroachment Permits are necessary when you wish to place anything in the road right-of-way temporarily or long term.
	Construction Permit	A Construction Permit is necessary for activities such as cutting, removing, or reconstructing curbs, curb and gutter, parkway drains, driveways, and/or sidewalks.
Department of Public Works, Flood Control	Discharge Permit	A Discharge Permit is needed for construction dewatering and hydrostatic test water discharge into the storm system and channels.

Agency/Department	Permit/Approval	Description
<b>City of Los Angeles</b>		
Department of Building and Safety	Building Permits	Grading, electrical, plumbing, and mechanical permits would be needed.
Department of Public Works, Bureau of Engineering	Excavation Permit Or	An Excavation Permit must be obtained from the Bureau of Engineering for any trench excavation activities, as well as electrifier and pull box relocations, monitoring wells, soil borings and potholes drilling within public right-of-way.
	Excavation (U) Permit	A U-Permit is required by the Bureau of Engineering for construction projects that will require public right-of-ways to be trenched or excavated. Electroliner and pull box relocations, monitoring wells, soil borings, and potholes drilling in public Right-of-Ways also need to obtain an excavation permit.
Department of Public Works, Bureau of Sanitation	Sanitation Application Form for Discharging to Sewer System	Approval for discharging hydrostatic test water to the sewer system is required from the Bureau of Sanitation. A Sanitation Application Form must be submitted to the Department of Public Works, Bureau of Sanitation.
Department of Public Works, Bureau of Street Services, Street Tree Division	Tree Permit	A Permit must be obtained from the Bureau of Street Services, Street Tree Division for the removal of any tree on City streets or public property. Removal of more than three trees may also require review and approval by the Board of Public Works.
Department of Transportation	Traffic Control Plan	Approval is needed for temporary lane closures and traffic/transportation – related issues during construction.
Department of Recreation and Parks	Right-of-entry Permit	Coordination of construction activities is required for activities within Griffith Park. LADWP would coordinate construction activities with the LADRP to obtain the necessary Right-of-entry Permit.

### 3. Environmental Analysis

---

This section of the EIR examines and describes the potential environmental impacts associated with the construction and operation of the proposed RSC Project. Based on the NOP/IS (August 2004) prepared for the Upper and Lower Reaches of the RSC pipeline (See Appendix A.1 and A.2) and comments submitted during the scoping process (See Appendix A.3), the environmental analysis focuses on three issues: Transportation/Traffic, Air Quality, and Noise.<sup>4</sup> Section 3 evaluates the impact of the Lower Reach RSC pipeline for each of these issue areas. This introduction describes the format followed in Section 3 for evaluating project impacts.

The environmental impact analysis includes four key areas. Each of these key areas is described below.

**Regulatory Setting.** The regulatory setting describes current public policies, regulations, programs, and standards that apply to the proposed project as it relates to the specific issue area in question. Often, these existing policies and regulations serve to reduce or avoid potential environmental impacts.

**Environmental Setting (CEQA Guidelines §15125).** The environmental setting section describes existing conditions in the project area that may be subject to change as a result of the implementation of the proposed project.

**Impacts and Mitigation (CEQA Guidelines §§15064.7, 15126, 15126.2, and 15126.4).** The impacts and mitigation measures section describes the anticipated environmental impacts that could result from the construction and operation of the proposed project. In determining the significance of impacts, the ability of existing regulations and other public agency requirements to reduce potential impacts is taken into consideration. If an adverse impact is potentially significant despite existing regulations and requirements, mitigation measures are proposed to reduce or avoid the impact, where feasible. Mitigation measures are only required for significant adverse impacts. Once impacts and mitigation measures, as applicable, are presented, the “level of significance after mitigation” is determined.

A significant impact is defined in CEQA as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project.” The CEQA Guidelines and various responsible agencies provide guidance for determining the significance of impacts; however, the determination of impact significance for each project is based on the independent judgment of the Lead Agency. Similarly, the establishment of any criteria used to evaluate the significance of impacts is the responsibility of the Lead Agency. The significance criteria are presented at the beginning of the impact analysis for each issue area.

While the criteria for determining significant impacts are unique to each issue area, the analysis applies a uniform classification of the impacts based on the following definitions:

- A designation of *no impact* is given when no adverse changes in the environment are expected.
- A *less-than-significant impact* would cause no substantial adverse change in the environment.

---

<sup>4</sup> As a result of comments received during the public review period for the Initial Study, and complications associated with the design and alignment of the proposed Upper Reach of the RSC pipeline, the scope of the proposed project was reduced to include only the Lower Reach.

- 
- A *less-than-significant impact with mitigation* avoids substantial adverse impacts on the environment through mitigation.
  - A *significant but unavoidable impact* would cause a substantial adverse impact on the environment, and no feasible mitigation measures would be available to reduce the impact to a less-than-significant level.

The significance of a potential impact is the key consideration in the environmental impact analysis. It is the intent of CEQA to focus on the significant adverse effects of a project, and the potential for a project to result in such impacts that triggers the requirement to prepare an EIR. For impacts that are determined not to be significant, the EIR need only provide sufficient information to indicate why the impacts are not significant. For significant impacts, adequate information and analysis must be provided to characterize each impact and provide the public and decision makers with an understanding of the nature and severity of the impact. The level of detail and analysis needed to adequately characterize significant impacts varies depending on the nature of the impact. Certain types of impacts require quantitative analysis in order to determine impact significance, characterize adverse effects, and formulate appropriate mitigation measures. Other types of impacts require more qualitative analysis with the determination of impact significance based on the independent judgment of the Lead Agency.

**Cumulative Impacts (CEQA Guidelines §§15130 and 15355).** Cumulative impacts are also discussed for each issue area. As described in the CEQA Guidelines, cumulative impacts “refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” To determine the potential for cumulative impacts, Section 2.8 of the Project Description identifies projects within 2.5 miles of the proposed Lower Reach alignment and projects that would be constructed within the same time frame as the proposed project. These cumulative projects were used to determine cumulative impacts for each issue area described in this section.

---

## **3.1 Transportation and Traffic**

### **3.1.1 Introduction**

This section presents the findings of the traffic study for the proposed project prepared by Katz, Okitsu, & Associates dated January 12, 2005. The study was prepared in consultation with the City of Los Angeles Department of Transportation (LADOT). The traffic study is included in its entirety in Appendix C of this Draft EIR. In addition, this section uses information from the site reconnaissance to supplement and address issues such as pedestrian safety and parking.

### **3.1.2 Regulatory Setting**

#### **California Department of Transportation**

The California Vehicle Code (code) establishes height, weight, length, and width restrictions for vehicles and their loads. Vehicles or loads that exceed these limitations are considered oversize and require a special permit to operate on the State highway system. The code authorizes the California Department of Transportation (Caltrans) to issue special permits for the movement of these oversize vehicles along specified routes on the State highway system. The code authorizes county and city governments, such as Los Angeles, to issue special permits for movement of oversize vehicles through their jurisdictions.

#### **City of Los Angeles**

The LADOT is responsible for transportation issues within the City of Los Angeles boundaries. LADOT reviews the transportation/traffic studies prepared for projects of all types for which the City is the lead agency, in addition to other public agency projects (County, State, or federal) located within, or that may affect, the City. LADOT's internal procedures are described in their Traffic Study Policies and Procedures Manual.

#### **County of Los Angeles**

New projects within the City must comply with the Congestion Management Program (CMP) for Los Angeles County, which was adopted by the Los Angeles County Metropolitan Transportation Authority (MTA) in November 1995, pursuant to State law. The CMP involves monitoring traffic conditions on the designated transportation network, performance measures, analysis of the impact of land use decisions on the transportation network, and mitigation to reduce impacts of the network.

Appendix D of the CMP includes Transportation Impact Assessment (TIA) guidelines. The TIA guidelines require analysis at monitored street intersections and segments, including freeway on- or off-ramp intersections, at which a project is expected to add 50 or more peak hour vehicle trips, and mainline freeway or ramp monitoring locations where the project will add 150 or more peak hour trips. If a project does not add, but merely shifts trips at a given monitoring location, the CMP analysis is not required.

An evaluation of transit impacts is required by the CMP for all projects for which an EIR will be prepared. The CMP also requires that transit system operators receive the NOP for all EIRs to evaluate the potential

---

impacts on existing transit systems, and establishes evaluation procedures. Transit corridors and centers subject to CMP requirements are identified in Appendix F of the CMP (City of Los Angeles, 1998).

### **3.1.3 Environmental Setting**

#### **Existing Street System**

##### **Overview**

The proposed Lower Reach RSC pipeline would involve the construction of approximately 37,400 linear feet (about 7.1 miles) of welded steel pipeline located along/in City of Los Angeles streets and property (refer to Section 2.4, proposed project, Figure 2-1). The north end of the proposed pipeline would (1) begin at the west end of the Headworks Spreading Grounds site and travel east through the Headworks property to Zoo Drive (Unit 1a) and (2) begin east of the Hollingsworth Spillway, where the proposed Lower Reach RSC pipeline would connect to the existing RSC, and travel southeast to Zoo Drive (Unit 1b). The north half of the pipeline would be located in Griffith Park and generally travel along Zoo Drive and Crystal Springs Drive. Once exiting Griffith Park at Crystal Springs Drive and Los Feliz Boulevard, the pipeline would continue southerly along Riverside Drive, turning south onto Glendale Boulevard, then southwest on Rokeby Street, then west on Rowena Avenue, and south again onto West Silver Lake Drive until reaching the intersection with Armstrong Avenue, where it would connect to the existing Ivanhoe Reservoir inlet line. Two branch or trunk lines would also be constructed. The first would begin south of Los Feliz Boulevard at Riverside Drive, and continue south through Mulholland Memorial Park, before entering the existing Rowena Tunnel to connect to the Rowena Tank. The other branch/trunk line would begin at Rowena Avenue and Rokeby Street and continue southeast on Rowena Avenue and tie into the Fletcher Pump Station suction line. Regional access to the study area is provided by U.S. Highway 134 (Ventura Freeway) to the north, Interstate 5 (Golden State Freeway) to the east, and State Route 2 (Glendale Freeway) to the southeast.

##### **Street Descriptions**

Table 3.1-1 summarizes the description of the construction units and the pipeline characteristics. In addition, the table provides a description of the proposed pipeline route. Based on the route description presented in Table 3.1-1, the following discussion provides a description of the roadways within each unit. Existing roadway configurations, such as number of lanes, bike lanes, and other details, are presented for the streets that have the potential to be impacted by the proposed project.

##### **Unit 1a and 1b**

- Headworks Spreading Grounds to Zoo Drive: No roadways would be affected in this segment as all construction would occur within the Headworks property.
- Zoo Drive from Forest Lawn Drive to Griffith Park Drive: Zoo Drive forms a “T” intersection with Forest Lawn Drive to the west and Griffith Park Drive to the east. At the Zoo Drive/Griffith Park Drive intersection, Zoo Drive forms the west and north legs of the intersection. Between Forest Lawn Drive and Griffith Park Drive, Zoo Drive is two-lane roadway with a paved median and paved shoulders. The Zoo Drive/Forest Lawn Drive intersection is controlled by a traffic signal.
- Zoo Drive between Griffith Park Drive and Unit 2: Zoo Drive is a two-lane roadway with a paved shoulder between Griffith Park Drive and North Zoo Drive. Within this roadway segment, Zoo Drive intersects Riverside

Drive and North Zoo Drive. The Zoo Drive/Riverside Drive and Zoo Drive/North Zoo Drive intersections are controlled by stop signs on all legs of the intersection. Between North Zoo Drive and Unit 2, Zoo Drive is a four-lane roadway.

**Table 3.1-1. Summary of Unit Route(s) and Characteristics**

Unit	Length (Feet)	Pipe Dia. (in)	Route
<b>LOWER REACH</b>			
Unit 1a Headworks Property and Griffith Park North	6,000	96	From the southwest end of the Headworks Spreading Grounds site, continuing through the Headworks property to a location near the intersection of Forest Lawn Drive and Zoo Drive, continuing to Zoo Drive west of the L.A. Live Steamers (children's train ride).
Unit 1b Griffith Park North along Zoo Drive	5,300	96	From east of Hollingsworth Spillway to L.A. Live Steamers, where Unit 1b connects to Unit 1a, and continuing along Zoo Drive to a location 1,800 feet north of the northerly end of Western Heritage Way.
Unit 2 Zoo Parallel	4,500	60	From the southern end of Unit 1b to approximately 800 feet south of the southern end of Western Heritage Way, running in Western Heritage Way, other paved roads, and equestrian trails.
Unit 3 Griffith Park South	12,000	96	From the southern end of Unit 2 to Los Feliz Boulevard, running in Crystal Springs Drive.
Unit 4 Los Feliz/Riverside to Rokeby/Rowena	4,200	84, 96	From the southern end of Unit 3, southeast in Riverside Drive; turning southerly onto Glendale Boulevard; turning southwest onto Rokeby Street, then westerly onto Rowena; and then south in West Silver Lake Drive to the intersection of West Silver Lake Drive and Armstrong Avenue (connecting to the Ivanhoe inlet line). In addition, two branch lines would be constructed in Unit 4.  The Rowena Branch Line would connect the Lower Reach RSC pipeline to the Rowena Tank. From the intersection of Riverside Drive and Los Feliz Boulevard, south through Mulholland Memorial Park and through the existing Rowena Tunnel to the existing Rowena Tank.  The Fletcher Pumping Station Branch Line would connect the Lower Reach RSC pipeline to the Fletcher Pump Station suction line. From the intersection of Rowena Avenue and Rokeby Street southeast along Glendale Boulevard to Fletcher Drive (connecting to the Fletcher Pump Station suction line).
Rowena/West Silver Lake	800	72	
Rowena/West Silver Lake to Armstrong/West Silver Lake	1,000	66	
<u>Trunk Line Rowena Branch Line</u> Los Feliz/Riverside to Rowena Tank	1,600	48	
<u>Trunk Line Fletcher Pumping Station Branch Line</u> Rokeby/Rowena to Fletcher	2,000	48	

### Unit 2

- Western Heritage Way between Zoo Drive and Unit 3: Western Heritage Way is a two-lane roadway with no shoulder or median. Within this roadway segment, Western Heritage Way is unsignaled.

### Unit 3

- Crystal Springs Drive to south of Griffith Park Drive: Zoo Drive becomes Crystal Springs Drive near North Zoo Drive. Crystal Springs Drive is a two-lane north-south roadway.
- Crystal Springs Drive from south of Griffith Park Drive to Los Feliz Boulevard: South of Griffith Park Drive, Crystal Park Drive becomes a two-lane divided highway. The Crystal Springs Drive/Los Feliz Boulevard intersection that serves and the southern boundary to this project segment/unit is controlled by a traffic signal.

### Unit 4

- 
- Riverside Drive between Los Feliz Boulevard and Glendale Boulevard: Crystal Springs Drive becomes Riverside Drive south of Los Feliz Boulevard. Riverside Drive is a four-lane north-south roadway with sufficient width to provide a paved median and provide for on-street parking.
  - Glendale Boulevard between Riverside Drive and Rokeby Street: Moving southward, the proposed pipeline route turns from Riverside Drive to Glendale Boulevard. The pipeline follows Glendale Boulevard between Riverside Drive to the north and Rokeby Street to the south. This segment of Glendale Boulevard provides two lanes of traffic in each direction.
  - Rokeby Street between Glendale Boulevard and Rowena Avenue: Again moving southward, the proposed pipeline turns from Glendale Avenue to Rokeby Street. The proposed pipeline route then follows the short roadway segment along Rokeby Street to Rowena Avenue. This roadway segment that provides both one lane of traffic in each direction and on-street parking. The intersections of Rokeby Street with Glendale Boulevard and Rowena Avenue are controlled by stop signs on Rokeby Street.
  - Rowena Avenue between Rokeby Street and West Silver Lake Drive: At the southern terminus of Rokeby Street, the proposed pipeline would turn west along a short segment of Rowena Avenue to West Silver Lake Drive. This roadway segment provides for two lanes of traffic in each direction and on-street parking. The Rowena Avenue/West Silver Lake Drive intersection is controlled by a traffic signal.
  - West Silver Lake Avenue between Rowena Avenue and Armstrong Avenue: West Silver Lake Avenue in this proposed pipeline segment is a two-lane residential roadway with sufficient width to provide on-street parking.

### **Freeways and Highways**

One freeway and two State Highways serve the project area, Interstate 5 (Golden State Freeway) to the east, State Route 134 (Ventura Freeway) to the north, and State Route 2 (Glendale Freeway) to the southeast. These facilities provide regional access to the project site and the surrounding vicinity and are briefly described as follows:

The *Golden State Highway (I-5)* is a north-south oriented freeway located immediately east of the project site (from Griffith Park Boulevard and Crystal Springs Drive) and is one of the most important traffic facilities in the Los Angeles Area. In the project vicinity, I-5 provides eight mixed mode travel lanes and one rideshare lane in each direction. Full interchanges are provided at Los Feliz Boulevard and Crystal Springs Drive east of the project route.

The *Ventura Freeway (134)* is an east-west oriented freeway located immediately north of the project site (Forest Lawn Drive). In the project vicinity, the Ventura Freeway provides six mixed mode travel lanes. A full interchange is provided at Forest Lawn Drive north of the project route.

The *Glendale Freeway (2)* is a southwest-northeast oriented freeway located southeast of the project site (Glendale Boulevard). In the project vicinity, the 2 Glendale Freeway provides four mixed mode travel lanes. The freeway starts south of the project route at Alvarado Boulevard traveling northeast where it becomes the Glendale Freeway.

### **Public Transit**

The project area is currently served by bus transit. Specifically, the MTA has developed a system of bus routes serving the area. Current bus route information indicates that several lines provide service within walking distance (less than two miles) of the project route that could be used by persons traveling to and from destinations along the proposed Lower Reach RSC route.



---

Within Units 1a, 1b, 2, and 3, none of the transit lines provide direct service along the project route. However, several lines serve adjacent areas along Zoo Drive, Crystal Springs Drive, and Griffith Park Drive. Within Unit 4, "local" routes with stops along the proposed route exist along Rowena Avenue. The bus lines which provide the closest service to the project route are identified and described as follows:

*Line 96* is a northeast-southwest route that serves the communities of Los Angeles, Glendale, Burbank, Sun Valley, Pacoima, and Sylmar. The route operates primarily along Glendale Boulevard and Glen Oaks Boulevard. Service is provided Monday through Friday from 5:30 a.m. to 8:30 p.m. and headways ranging from 15 minutes to one hour. This line stops at the San Fernando Metrolink Station.

*Line 92* is a north-south route that serves the communities of Sherman Oaks, Valley Village, Universal City, Burbank, Griffith Park, and downtown Los Angeles. The route operates primarily along Riverside Drive and stops at the intersection of Grand Avenue and Venice Boulevard in downtown Los Angeles. Service is provided Monday through Friday from 5:30 a.m. to 8:30 p.m.

### **3.1.4 Impacts and Mitigation Measures**

#### **Construction Assumptions**

Construction of the proposed project would primarily use the open-trench method, except at busy intersections where the pipeline would be installed using the jacking method, locations in the Headworks Spreading Grounds site and Griffith Park where portions would be installed using traditional tunneling or jacking, and at the Rowena Tunnel where the pipeline would be installed by the slip lining method. In sequence, the general process for the construction methods consists of site preparation, excavation, pipe (and/or appurtenant structure) installation and backfilling, and street restoration (where applicable).

It is estimated that a typical construction spread would require the closure of three travel lanes. Intersections where open trench construction is used would be affected for approximately four weeks with turning traffic affected considerably longer. Construction would require off-site staging area(s) to temporarily store supplies and materials. Contractors would be responsible for scouting and securing suitable local lots for staging areas. However, possible staging areas identified for the proposed project include various City-owned lots within Griffith Park, or at local LADWP facilities, such as the Silver Lake Reservoir Complex.

At the time this assessment was performed, the actual location of the required trenching and tunneling within the identified roadways was not defined. Open trench construction would have the greatest traffic circulation impact. As discussed in the Project Description (Section 2), it is assumed that trenching operations would require a "spread" of approximately three travel lanes (approximately 30 to 36 feet). Table 3.1-2 identifies potential lane and roadway closures that would be required for trenching construction within these units.

#### **Methodology**

The proposed Lower Reach RSC Project was analyzed by project segment or unit number (see Table 3.1-1). The methodology was developed in consultation with the LADOT. General traffic conditions were analyzed on roadways where the proposed project would be constructed. As detailed construction and closure plans for the proposed project are not yet available, analysis was not conducted for specific

intersections or specific project segments. Capacity would be constricted, in some form, along each project segment during construction.

**Table 3.1-2. Summary of Potential Trenching Roadway Closures for All Units**

<b>Street Segment</b>	<b>Potential Roadway Impact</b>
Headworks Property and Griffith Park North (West Project Limit to Zoo Drive)	No roadway closures, as pipeline construction would occur within the Headworks property and not on existing streets.
Griffith Park North along Zoo Drive (east of Hollingsworth Spillway to North Zoo Drive)	Potential complete street closure.
Zoo Parallel Line (Western Heritage Way)	Potential complete street closure.
Griffith Park South (Crystal Springs Drive from Griffith Park Drive to Los Feliz Boulevard)	This segment of roadway is a four-lane divided roadway. If the pipeline is located in either the northbound or southbound lanes, then traffic can be reduced to one lane in each direction and utilize the northbound or southbound roadway, depending on which roadway requires closure.
Riverside Drive between Los Feliz Boulevard and Glendale Boulevard	This section of roadway has four lanes, left turn lanes and a wide curb lane. At least two lanes could be maintained during construction.
Glendale Boulevard from Riverside Drive to Rokeby Street	This section of roadway is comprised of four relatively narrow lanes. Trenching on this portion of roadway would require street closure.
Roadways south of Rokeby Street	Trenching on these roadways would require street closure.

Source: Traffic Study for the Los Angeles Department of Water and Power River Supply Conduit (RSC) Project (Lower Reach). Katz, Okistsu, & Associates. January 12, 2005 (see Appendix C).

Note: Subsequent to the completion of the Traffic Study, it was determined that the proposed Lower Reach RSC pipeline would not be installed in Forest Lawn Drive. As such, potential roadway impacts to Forest Lawn Drive, which are presented in the Traffic Study (see Appendix C), are not included in this table.

### Significance Criteria

The traffic/transportation significance criteria are based on the CEQA checklist in Appendix G of the CEQA Guidelines and a review of the environmental documentation for other utility projects in California. Traffic/transportation impacts would be significant if one or more of the following conditions resulted from construction:

- Criterion T-1: The installation of the water line within, adjacent to, or across a roadway would reduce the number of, or the available width of, one or more travel lanes during the peak traffic periods, resulting in a temporary disruption to traffic flow and/or increased traffic congestion.
- Criterion T-2: A major roadway (arterial or collector classification) would be closed to through traffic as a result of construction activities and there would be no suitable alternative route available.
- Criterion T-3: Construction activities would restrict access to or from adjacent land uses and there would be no suitable alternative access.
- Criterion T-4: Construction activities would restrict the movements of emergency vehicles (police cars, fire trucks, ambulances, and paramedic units) and there would be no reasonable alternative access routes available.
- Criterion T-5: Construction activities or staging activities would increase the demand for and/or reduce the supply of parking spaces and there would be no provisions for accommodating the resulting parking deficiencies.
- Criterion T-6: Construction activities would disrupt public transit service and there would be no suitable alternative routes or stops.

- 
- Criterion T-7: Construction activities of the project would result in safety problems for vehicular traffic, pedestrians, transit operations, or trains.

## **Project Impacts**

### **Impacts to Traffic Flow (Criterion T-1 and T-2)**

**Construction.** Construction of the proposed project would generate additional traffic on the regional and local roadways. Construction worker commute trips, project equipment deliveries and hauling materials such as pipe, concrete, fill, and excavation spoils would increase existing traffic volumes in the project area. In addition, it is estimated that a typical construction activity would require the closure of three travel lanes. Intersections where open trench construction is used would be affected for approximately four weeks with turning traffic affected considerably longer. The following outlines street closures and impacts by unit:

- **Unit 1a and 1b.** Construction of the proposed project along Units 1a and 1b would likely require complete closure of some segments of Zoo Drive in Griffith Park.

No major alternate routes are located in close proximity to Unit 1. Riverside Drive, on the north side of SR-134, could be utilized as an alternate route to some extent. The relatively low traffic volumes along Zoo Drive could generally be accommodated with a reduced number of travel lanes. Closure of Zoo Drive could affect access to the I-5 Southbound On-Ramp (via the Unit 2 project segment) near the Gene Autry Museum of Western Heritage. For the most part, full closure of Zoo Drive would only affect local traffic within Griffith Park.

- **Unit 2.** Construction along Unit 2 could require either complete or partial closure of segments of Western Heritage Way in Griffith Park. A potential alternate route during construction would be the I-5 and SR-134 freeway via Los Feliz Boulevard. As construction along Unit 2 would not involve major roadways or significant traffic volumes, use of such an alternate route would only be necessary during complete roadway closures.
- **Unit 3.** Construction along Unit 3 would require partial closures along segments of Crystal Springs Drive. Along most of Unit 3, the roadway has a landscaped median. Partial construction closures would likely entail the use of one side of the roadway in a two-lane operation.
- **Unit 4.** Construction of Unit 4 would require partial closures along Riverside Drive, and could require full closure of smaller roadways such as Rowena Avenue, Rokeby Street, and Silver Lake Drive. Access would likely remain along Riverside Drive. Parallel roadways would need to be utilized as detour routes for the road closures on smaller streets.

The proposed project would result in significant impacts during construction since much of the proposed project would be performed via open trenching that would occur on roadways that are heavily traveled. Therefore, construction activities would reduce capacities on the roadways directly affected and divert traffic to adjacent roadways that are also heavily traveled. While jacking and tunneling could be used to reduce traffic impacts at specific locations, use of this method throughout the entire route would be prohibitively costly. There are no measures that could be implemented to make the project impact less than significant, as open trenching on heavily traveled streets would result in diversion of traffic to adjacent routes that would likely also operate at very poor levels of service. However, implementation of the following mitigation measure would help to reduce impacts associated with construction of the proposed project to the extent feasible:

- T-1** Prior to the start of construction, LADWP shall submit a Construction Traffic Management Plan to the Los Angeles Department of Transportation for review and approval prior to the start of any construction work. The plan shall show the location of roadway or lane closures, traffic detours,

---

haul routes, hours of operation, and local access (maintenance of), including bike lanes if applicable. The Plan shall also discuss the use of flag persons, warning signs, lights, barricades, cones, etc. according to standard guidelines outlined in the Caltrans Traffic Manual, the Standard Specifications for Public Works Construction, and the Work Area Traffic Control Handbook (WATCH).

Implementation of Mitigation Measure T-1 would reduce construction related traffic impacts; however, due to the magnitude of the construction activities the impacts would continue to be significant and unavoidable. A Statement of Overriding Considerations would be required for construction of the Lower Reach RSC Project.

**Operation.** Once operational, the proposed project would not result in traffic volumes above those currently generated for inspection and maintenance along the Lower Reach RSC pipeline route. Inspection and maintenance activities would be limited to periodic inspections of the isolation, air, and vacuum valves, as well as testing the isolation valves. These activities would result in periodic vehicle trips, but would result in negligible impacts to traffic volumes and the parking capacities of the roadways along the route over the life of the proposed project. Because these impacts would be temporary in nature, operation of the proposed project would have no lasting impact on the study roadways or the adjacent roadway systems, including the Los Angeles County Congestion Management roadways of the State Highway system. Operation of the proposed project would not impact existing public transportation or pedestrian access locations or routes. Therefore, traffic impacts from operations of the proposed project would be less than significant and no mitigation measures would be required.

### **Impacts to Public Access (Criterion T-3)**

**Construction.** When construction occurs in the outer lane and/or shoulders of roads, access to driveways would be temporarily blocked by the construction zone, thereby affecting access and parking for the adjacent residences, institutions, businesses and other land uses. Within Unit 4, access to side streets, entrances, and driveways would be temporarily disrupted and possibly blocked during construction. This could potentially deprive business owners of customer patronage and could prevent residents from enjoying full use of their properties. While in most cases and at most times, alternative access would be available via minor detours, in a limited number of instances automobile access could be completely blocked during construction. This would represent a conflict with an established land use. However, even under a worst-case situation, reasonable pedestrian access would be available at all times, to all businesses and residences. In such a worst-case situation, for example, a business patron could be obliged to park up to a few hundred feet away from a destination. Reasonable vehicular and full pedestrian access to private homes located along the alignment would be available at all times. There may be some isolated locations along the proposed Lower Reach RSC alignment where construction could block the driveway to a private off-street parking lot serving a business. In these instances, such disruption could potentially deprive a business of patronage; however, such disruption would be short-term in nature as the proposed project construction would be phased in work areas where each work area would typically vary between 800 and 1,000 feet. While the potential disruption of established land uses along the pipeline alignment would be short-term, it would be a significant impact. To reduce the severity of public access impacts, Mitigation Measures T-2 and T-3, below, are recommended.

---

**T-2** LADWP shall provide a minimum of 48-hour advance notification of the potential for disrupted access to and parking for any business, residence, or recreational facility that may experience delayed access or reduced parking capacity in the vicinity. The notification shall include information on restoring access and the estimated amount of time that access may be blocked.

**T-3** If vehicular access to businesses, residences, and recreational facilities cannot be restored within eight (8) hours, LADWP or its construction contractor shall provide a one lane temporary vehicular bridge for access (LADWP Specification F01560 - Project Controls, Section 3.07D).

Within Units 1a, 1b, 2, and 3, construction activities could block access to driveways and recreational open space (picnic areas, walking trails, etc.) located within Griffith Park. Within Griffith Park, on Crystal Springs Drive where the road is open to two-way traffic, construction may be limited to nighttime hours only. Day and/or night construction (up to 24 hours per day with police commission approval) would occur within Griffith Park along Crystal Springs Drive, where the road is open to only one-way traffic, since the lower portion of Crystal Springs Drive would be entirely closed throughout construction within that area (City of Los Angeles Department of Recreation and Parks approval would be required). This proposed construction phasing would reduce access impediment impacts and require coordinating with local agencies for public notification of construction activities, trail and recreational facility closures, and alternate routes. The implementation of Mitigation Measures T-2 and T-3, including coordination with the City of Los Angeles Department of Recreation and Parks, would reduce impacts resulting from construction; however public access impacts would still be significant.

**Operation.** Once operational, the proposed project would not result in lane closures or any other restrictions to surrounding site access along the project route. Operations of the proposed project would not impact existing public access locations or routes. Therefore, access impacts from operations of the proposed project would be less than significant and no mitigation measures would be required.

#### **Impacts to Emergency Vehicle Access (Criterion T-4)**

**Construction.** Construction activities could potentially interfere with emergency response by ambulance, fire, paramedic, and police vehicles. The loss of a lane and the resulting increase in congestion could lengthen the response time required for emergency vehicles passing through the construction zone. Moreover, there is a possibility that emergency services may be needed at a location where access is temporarily blocked by the construction zone. Mitigation Measures T-3 (above) and T-4 (below) are recommended to reduce potentially significant impacts to less than significant levels.

**T-4** LADWP shall coordinate in advance with emergency service providers to avoid restricting movements of emergency vehicles. Police departments, fire departments, ambulance services, and paramedic services shall be notified in advance by LADWP of the proposed locations, nature, timing, and duration of any construction activities and advised of any access restrictions that could impact their effectiveness. At locations where access to nearby property is blocked, provision shall be ready at all times to accommodate emergency vehicles, such as plating over excavations, short detours, and alternate routes in conjunction with local agencies. The Traffic Construction Management Plan (T-1) shall include details regarding emergency services coordination and procedures.

---

**Operation.** Once operational, the proposed project would not result in lane closures or any other restrictions to surrounding site access along the project route. Operations of the proposed project would not impact existing emergency vehicle access locations or routes. Therefore, access impacts from operations of the proposed project would be less than significant and no mitigation measures would be required.

#### **Impacts to Parking (Criterion T-5)**

**Construction.** Workers commuting to the construction sites would increase traffic in the project area. According to the project description, the daily project workforce of approximately 100 personnel (22 employees times four open trench activities, plus four employees multiplied by three jacking operations) would be employed on the project during the peak construction period. It is assumed that up to 83 workers would drive personal vehicles to construction sites (assuming a 1.2 rideshare/other transportation factor). Parking for worker vehicles would be provided at the construction staging sites and surrounding locations. From these points, some workers would drive or ride in project vehicles to work areas along the Lower Reach RSC right-of-way (ROW). In addition, construction activities may result in short-term elimination of a limited amount of parking spaces immediately adjacent to the construction ROW. Therefore, the proposed project could result in a significant decrease to available parking along the Lower Reach RSC alignment. Implementation of Mitigation Measure T-2 would reduce impacts; however, parking impacts would still be significant.

**Operation.** Once operational, the proposed project would not result in lane closures or any other restrictions to surrounding parking along the project route. Operations of the proposed project would not impact existing parking along the route. Therefore, parking impacts from operations of the proposed project would be less than significant and no mitigation measures would be required.

#### **Impacts to Public Transit (Criterion T-6)**

**Construction.** Impacts to transit service would be likely along project segments during construction. Construction of the proposed Lower Reach RSC pipeline would disrupt two MTA bus routes (Routes 92 and 96) and possibly local school bus routes. Potential impacts would include scheduling delays and bus stop closures. Temporary stop relocations/closures and line re-routing would be necessary based on the roadway width needed for project construction. Turning movements would be restricted or closed, forcing rerouting from neighborhoods currently served by transit. However, the implementation of Mitigation Measure T-5 described below is recommended to reduce potentially significant public transit impacts to less than significant levels.

**T-5** LADWP shall coordinate in advance with MTA to avoid restricting movements of public transportation. MTA shall be notified in advance by LADWP of the proposed locations, nature, timing, and duration of any construction activities and advised of any access restrictions that could impact existing bus stops and service routes. Traffic Construction Management Plan (Mitigation Measure T-1) shall include details regarding public transportation coordination and procedures, and copies shall be provided to MTA.

**Operation.** Once operational, the proposed project would not result in lane closures or any other restrictions to surrounding MTA transit routes or stops. Operations of the proposed project would not

---

impact existing MTA operations along the route. Therefore, public transit impacts from operations of the proposed project would be less than significant and no mitigation measures would be required.

### **Impacts to Pedestrian Safety (Criterion T-7)**

**Construction.** Pedestrian and bicycle circulation would be affected by project construction activities if pedestrians and bicyclists were unable to pass through the construction zone or if established pedestrian and bike routes were blocked. Additionally, since there may be a disruption to bicycle routes, sidewalks, shoulders, and pedestrian crossings, pedestrians and bicyclists may enter the affected streets and highways and risk a vehicular-related accident. Required permits for temporary lane closures would be obtained from the City of Los Angeles and Caltrans. Before obtaining roadway encroachment permits, LADWP would submit a Traffic Construction Management Plan (per Mitigation Measure T-1), to the LADOT. As part of the plan, traffic control measures and construction vehicle access routes would be identified and would include discussion of haul routes, limits on the length of open cuts, and resurfacing requirements. Within Griffith Park, on Crystal Springs Drive where the road is open to two-way traffic, construction may be limited to nighttime hours only. Day and/or night construction (up to 24 hours per day with police approval) would occur within Griffith Park along Crystal Springs Drive, where the road is open to only one-way traffic, since the lower portion of Crystal Springs Drive would be entirely closed throughout construction within that area. This proposed construction phasing would reduce pedestrian access impediment impacts and require coordinating with local agencies for public notification of construction activities, trail and recreational facility closures, and alternate routes. Furthermore, all property owners and residents on streets where construction would occur would be notified prior to the start of construction. Advance public notification would include postings of notices and appropriate signs. Therefore, impacts to pedestrian safety are considered to be less than significant.

**Operation.** Once operational, the proposed project would not result in lane closures or any other impedance to pedestrians and bicyclists along the project route. Therefore, public safety impacts from operations of the proposed project would be less than significant and no mitigation measures would be required.

### **3.1.5 Level of Significance After Mitigation**

Implementation of Mitigation Measures T-1 would help to reduce construction related traffic flow impacts; however, due to the magnitude of the construction activities the impacts would continue to be significant and unavoidable. A Statement of Overriding Considerations would be required for construction of the proposed Lower Reach RSC Project. Alternatively, with implementation of Mitigation Measures T-1 through T-5, impacts to public and emergency vehicle access, parking, public transit, and pedestrian safety would be reduced to less-than-significant levels.

### **3.1.6 Cumulative Impacts**

Operation of the proposed project would result in periodic vehicle trips associated with inspection and maintenance activities that would generate negligible emissions over the life of the project. Therefore, the focus of this cumulative impact discussion is based on short-term construction impacts. The majority of construction for the proposed project is expected to occur from mid-October 2005 to early September 2008 (LADWP, 2005a). Other construction projects identified within the project area and within approximately

---

## **3.2 Air Quality**

### **3.2.1 Introduction**

This section provides information on ambient air quality conditions in the vicinity of the proposed Lower Reach alignment and identifies potential impacts that would occur to local air quality as a result of construction and operation of the proposed project. Sections 3.2.2 and 3.2.3 describe the existing regulatory and environmental setting of the project area, respectively. Section 3.2.4 presents the impacts and mitigation measures, Section 3.2.5 describes the level of significance after mitigation is implemented, and Section 3.2.6 presents the cumulative impacts that would occur as a result of the proposed project.

### **3.2.2 Regulatory Setting**

#### **Ambient Air Quality Standards**

Regulation of air pollution is achieved through a combination of ambient air quality standards and emission limits for individual sources and categories of sources of air pollutants. The federal Clean Air Act requires the U.S. Environmental Protection Agency (USEPA) to identify National Ambient Air Quality Standards (NAAQS or federal ambient air quality standards) to protect public health and welfare. The NAAQS are established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter, and lead. These pollutants are called “criteria” air pollutants because the intent of the standards is to meet specific public health and welfare criteria. California has adopted more stringent ambient air quality standards (CAAQS or State ambient air quality standards) for most of the criteria air pollutants. The applicable federal and State ambient air quality standards (AAQS) and a brief discussion of the related health effects and principal sources for each pollutant are presented in Table 3.2-1. As indicated in this table, the averaging times (the duration over which they are measured) for the various air quality standards range from 1-hour to annual. The standards are read as a volume fraction, in parts per million (ppm), or as a concentration, in milligrams and/or micrograms of pollutant per cubic meter of air ( $\text{mg}/\text{m}^3$  or  $\mu\text{g}/\text{m}^3$ ).

As required by the federal Clean Air Act, the USEPA classifies air basins or portions thereof, as either “attainment” or “nonattainment” for each criteria air pollutant, based on whether or not the national standards have been achieved. The California Clean Air Act also requires designation of areas as “attainment” or “nonattainment” for the State standards, rather than the national standards. Thus, areas in California have two sets of attainment/nonattainment designations: one set with respect to the national standards and one set with respect to the State standards. The proposed project would be located in the Los Angeles County sub-area of the South Coast Air Basin (SCAB), which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). Table 3.2-2 summarizes the federal and State attainment status of criteria pollutants for the SCAB.



**Table 3.2-1. Federal and State Ambient Air Quality Standards**

Pollutant	Averaging Time	Federal Standard	California Standard	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone (O <sub>3</sub> )	8 Hour	0.08 ppm (157 µg/m <sup>3</sup> )	—	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Formed when reactive organic gases (ROG) and nitrogen oxides (NO <sub>x</sub> ) react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial/ industrial mobile equipment.
	1 Hour	0.12 ppm (235 µg/m <sup>3</sup> )	0.09 ppm (180 µg/m <sup>3</sup> )		
Carbon Monoxide (CO)	8 Hour	9 ppm (10 mg/m <sup>3</sup> )	9.0 ppm (10 mg/m <sup>3</sup> )	Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
	1 Hour	35 ppm (40 mg/m <sup>3</sup> )	20 ppm (23 mg/m <sup>3</sup> )		
Nitrogen Dioxide (NO <sub>2</sub> )	Annual Avg.	0.053 ppm (100 µg/m <sup>3</sup> )	—	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
	1 Hour	—	0.25 ppm (470 µg/m <sup>3</sup> )		
Sulfur Dioxide (SO <sub>2</sub> )	Annual Avg.	0.030 ppm (80 µg/m <sup>3</sup> )	—	Irritates upper respiratory tract, injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	24 Hour	0.14 ppm (365 µg/m <sup>3</sup> )	0.04 ppm (105 µg/m <sup>3</sup> )		
	3 Hour	0.5 ppm (1300 µg/m <sup>3</sup> )	—		
	1 Hour	—	0.25 ppm (655 µg/m <sup>3</sup> )		
Respirable Particulate Matter (PM <sub>10</sub> )*	Annual Arithmetic Mean	50 µg/m <sup>3</sup>	20 µg/m <sup>3</sup>	May irritate eyes and respiratory tract, decreases in lung capacity, cancer and increased mortality. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 Hour	150 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>		
Fine Particulate Matter (PM <sub>2.5</sub> )*	Annual Arithmetic Mean	15 µg/m <sup>3</sup>	12 µg/m <sup>3</sup>	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; Also, formed from photochemical reactions of other pollutants, including NO <sub>x</sub> , sulfur oxides, and organics.
	24 Hour	65 µg/m <sup>3</sup>	—		
Lead	Calendar Quarter	1.5 µg/m <sup>3</sup>	—	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurologic dysfunction.	Present source: lead smelters, battery manufacturing and recycling facilities. Past source: combustion of leaded gasoline.
	30 Day Average	—	1.5 µg/m <sup>3</sup>		

Source: CARB, 2004, SCAQMD, 1993.

\* On June 20, 2002, the Air Resources Board approved the recommendation to revise the PM<sub>10</sub> annual average standard to 20 µg/m<sup>3</sup> (arithmetic mean) and to establish an annual average standard for PM<sub>2.5</sub> of 12 µg/m<sup>3</sup> (arithmetic mean). On June 5, 2003, the Office of Administrative Law approved the amendments to the regulations for PM. Information regarding these revisions can be found at [www.arb.ca.gov/research/aaqs/std-rs/std-rs.htm](http://www.arb.ca.gov/research/aaqs/std-rs/std-rs.htm).

**Table 3.2-2. Attainment Status for the South Coast Air Basin**

Pollutants	Federal Classification	State Classification
Ozone (1-hour)	Extreme Non-Attainment	Extreme Non-Attainment
Ozone (8-hour)	Severe Non-Attainment	N/A
PM <sub>10</sub>	Serious Non-Attainment	Non-Attainment
PM <sub>2.5</sub>	Non-Attainment <sup>a</sup> (proposed)	Non-Attainment <sup>b</sup> (proposed)
CO	Serious Non-Attainment	Non-Attainment <sup>c</sup>
NO <sub>2</sub>	Attainment	Attainment
SO <sub>2</sub>	Attainment	Attainment

Source: CARB, 2004, USEPA, 2004.

Note(s): CO = carbon monoxide; NO<sub>2</sub> = nitrogen dioxide; SO<sub>2</sub> = sulfur dioxide; PM<sub>10</sub> = particulate matter less than 10 micrograms in diameter; N/A = Not Applicable.

a. Proposed Federal PM<sub>2.5</sub> attainment status recommended by the California Air Resources Board on February 11, 2004. The USEPA plans to finalize PM<sub>2.5</sub> designations by December 15, 2004. Report available at <http://www.arb.ca.gov/degis/pm25degis/pm25degis.htm>.

b. Proposed State PM<sub>2.5</sub> attainment status from 2003 Staff Report Attachment B - Proposed Amendments to the Area Designations available at <http://www.arb.ca.gov/degis/degis03/degis03.htm>.

c. Los Angeles County portion of SCAB.

## Rules and Regulations

Federal, State, and regional agencies have established air quality rules and regulations that affect the project area. The following regulatory considerations may apply to the project area.

### Federal Regulations

- The 1990 federal Clean Air Act (CAA) Amendments overhauled the planning provisions for areas not meeting the NAAQS. The amendments identified specific emission reduction goals, required both a demonstration of reasonable further progress and attainment by specified dates, and incorporated more stringent sanctions for failure to attain the NAAQS or to meet interim attainment milestones.
- The USEPA implements New Source Review (NSR) and Prevention of Significant Deterioration (PSD). PSD applies to major sources with annual emissions exceeding either 100 or 250 tons per year (tpy) depending on the source, or that cause or contribute adverse impacts to any federally classified Class I area. PSD would not apply to the proposed project.
- The USEPA implements the NAAQS and determines attainment of federal air quality standards on a short- and long-term basis.

### State Regulations

- The California Air Resources Board (CARB) establishes and periodically updates the CAAQS and determines attainment status for criteria air pollutants.
- The California CAA went into effect on January 1, 1989, with the mandate that local air districts achieve the health-based CAAQS at the earliest practicable date.
- The Statewide Portable Equipment Registration Program established by CARB allows operation of portable equipment throughout California without having to obtain individual permits from local air districts.

### Local Rules and Regulations

Emissions that would result from construction of the proposed project are subject to the rules and regulations of the SCAQMD. Rules and regulations of this agency are designed to achieve defined air quality standards that are protective of public health. To that purpose, they limit the emissions (during both construction and operation phases of projects) and the permissible impacts of emissions from projects, and specify emission controls and control technologies for each type of emitting source in order to ultimately

achieve the air quality standards. SCAQMD rules and regulations that may be applicable to the proposed project include:

- Rule 401: limits visual exhaust emission discharges that occur for more than three minutes an hour;
- Rule 402: restricts discharges of air contaminants in quantities that could cause injury, detriment, nuisance, or annoyance;
- Rule 403: reduces the amount of particulate matter entrained in the ambient air as a result of man-made fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions;
- Rule 1110.2: reduces NO<sub>x</sub>, volatile organic compounds (VOC), and CO from all stationary and long-term use portable engines over 50 brake horsepower; and
- Rule 1166: sets requirements to control the emission of VOCs from excavation, grading, handling, and treating VOC-contaminated soil as a result of leakage from storage or transfer operations, accidental spillage, or other deposition.

### 3.2.3 Environmental Setting

#### Meteorological Conditions

The study area lies within the SCAB (see Figure 3.2-1), which is characterized as a Mediterranean climate with mild winters, when most rainfall occurs, and hot, dry summers. The regional climate is dominated by a strong and persistent high-pressure system that frequently lies off the Pacific coast (generally known as the *Pacific High*). The Pacific High shifts northward or southward in response to seasonal changes or the presence of cyclonic storms. Besides the influence from the Pacific High, other important meteorological characteristics influencing air quality in the study area are the persistent temperature inversions, predominance of onshore winds, mountain ridge and valley topography, and prevalent sunlight.

A monthly climate summary for Burbank, California was selected to characterize the climate of the study area. As described in Table 3.2-3, average summer (July) high and low temperatures in the study area are 89°F and 61°F, respectively. Average winter (January) high and low temperatures in the study area are 67°F and 42°F, respectively. The average annual precipitation is approximately 16.1 inches with approximately 75 percent occurring between December and March. Little precipitation occurs during summer because a high-pressure cell blocks migrating storm systems over the eastern Pacific.

**Table 3.2-3. Monthly Average Temperatures and Precipitation**

Month	Temperature, °F		Precipitation, inches
	Maximum	Minimum	
January	67	42	3.26
February	69	44	3.81
March	71	46	2.90
April	74	49	1.19
May	77	53	0.28
June	82	57	0.08
July	89	61	0.01
August	89	61	0.11
September	87	59	0.20
October	81	53	0.46
November	74	46	1.57
December	68	42	2.25
Annual average/total	77	51	16.12

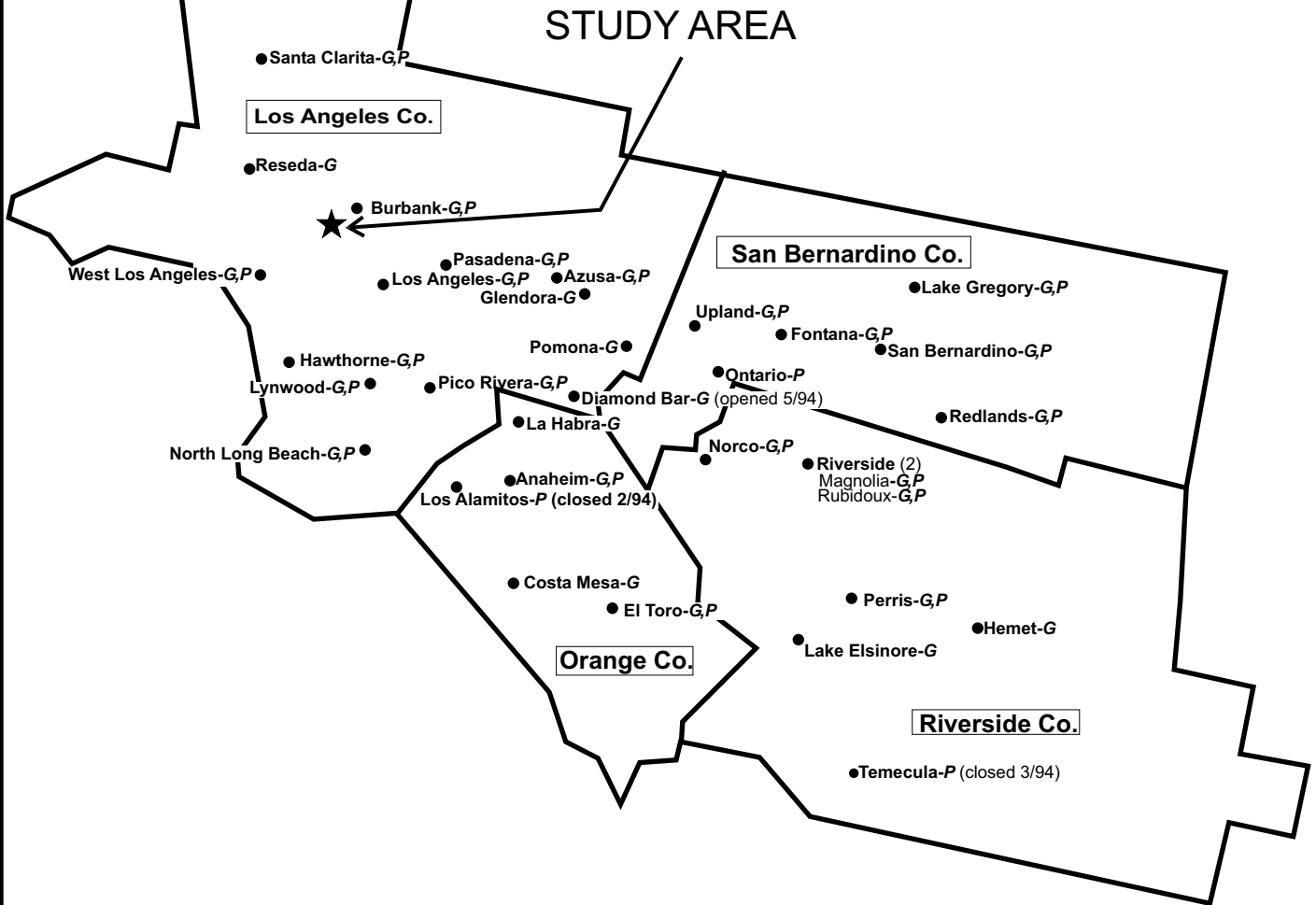
Source: Western Regional Climate Center, 2004. Period of Record is from December 1939 to March 2004.

# Lower Reach RSC Project

Figure 3.2-1

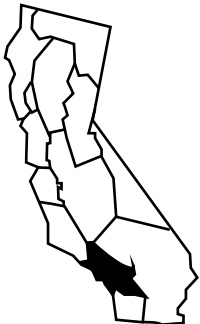
## South Coast Air Basin

**Aspen**  
Environmental Group

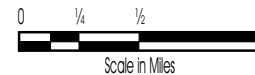
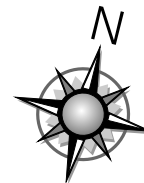


Source: CARB, 2000

California Air Basin



**G** Gaseous Monitoring  
**P** Particulate Monitoring



Wind patterns in the project vicinity display a unidirectional on-shore flow that tends to wrap around the Santa Monica Mountains from the southeast. Winds are strongest during the summer, with a weaker offshore return flow that is strongest during winter nights when the land is colder than the ocean. The on-shore winds that sweep across the region average from eight to twelve miles per hour (mph) with stronger winds occurring during the summer. The offshore flow is often calm or drifts slowly southeasterly at three to eight mph, with winter nights showing the strongest effects (SCAQMD, 1993).

## Existing Air Quality

Existing and historical ambient air quality trends in the project area are best documented by measurements recorded at the SCAQMD air monitoring station closest to the project area. Data collected at the Burbank West Palm Avenue (Burbank) monitoring station was selected to represent ambient air quality conditions in the vicinity of project area. The Burbank monitoring station is located approximately three miles east of the northern portion of the proposed pipeline route. Monitored air pollutants at the Burbank monitoring station include carbon monoxide (CO), particulate matter (PM<sub>10</sub>), and ozone (O<sub>3</sub>). Air quality trends recorded at the Burbank monitoring station from 2001 to 2003 are presented in Table 3.2-4.

**Table 3.2-4. Ambient Air Quality Monitoring Data from the Project Area**

Pollutant Standards	Burbank West Palm Avenue Monitoring Station		
	2001	2002	2003
<b>Carbon Monoxide (CO)</b>			
Maximum 8-hour concentration (ppm)	5.0	4.5	4.5
No. Days Standard Exceeded			
NAAQS (8-hour) > 9.5 ppm	0	0	0
CAAQS (8-hour) > 9.0 ppm	0	0	0
<b>Particulate Matter (PM<sub>10</sub>)</b>			
Maximum 24-hour concentration (µg/m <sup>3</sup> )	86	71	81
No. (%) Samples Exceeding Standards			
NAAQS (24-hour) > 150 (µg/m <sup>3</sup> )	0	0	0
CAAQS (24-hour) > 50 (µg/m <sup>3</sup> )	14 (23%)	7 (12%)	7 (N/A)
<b>Ozone (O<sub>3</sub>)</b>			
Maximum 1-hour concentration (ppm)	0.13	0.13	0.13
No. Days Standard Exceeded			
NAAQS (1-hour) > 0.12 ppm	2	1	4
CAAQS (1-hour) > 0.09 ppm	15	17	37
Maximum 8-hour concentration (ppm)	0.10	0.10	0.11
No. Days Standard Exceeded			
NAAQS (8-hour) > 0.8 ppm	4	5	21

Source: CARB, 2004.

Notes: ppm = parts per million; µg/m<sup>3</sup> = micrograms per cubic meter.

## Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely and chronically ill, and especially those with cardio-respiratory diseases.

Residential areas are also considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Although

---

exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time.

A land use survey along the proposed pipeline route was conducted to identify sensitive receptors (e.g., local residences, schools, hospitals, churches, recreational facilities) in the general vicinity of the proposed project. Residential receptors are dispersed along Units 3 and 4. Within Units 1a, 1b, and 2 (Griffith Park area), residences are not immediately adjacent to the proposed pipeline route. One elementary school (Ivanhoe Elementary) exists along the proposed pipeline route and several park and recreation areas are in close proximity, including golf courses, Griffith Park, and the Griffith Recreation Center. For a complete listing of all land uses along the proposed pipeline route, refer to the Initial Study Land Use Section, Table 3.9-1 (Appendix A.2).

### **3.2.4 Impacts and Mitigation Measures**

#### **Methodology**

For the proposed project, the majority of construction activities are expected to occur beginning the middle of October 2005 to early September (35 months or ~3 years). Slurrying would begin after construction of Units 1b, 3 and 4 have been completed. Slurrying of the existing RSC between the Hollingsworth Spillway Structure and Unit 1b would occur after the Headworks Reservoir construction is completed, which is estimated to occur in late 2011 (LADWP, 2004b). Unit 2 would be constructed beginning in February 2016, long after the completion of Units 1a, 1b, 3 and 4. However, projected air emissions during construction were calculated based on the maximum amount of construction activity that would occur during one day, to provide both a conservative estimate of air emissions associated with the proposed project and to compare the daily emissions to the SCAQMD construction emission thresholds.

Air emissions for the proposed project were calculated using a standard calculation methodology accepted by the SCAQMD. For on-road vehicles, emission factors for the year 2006 from CARB's EMFAC 2002 on-road motor vehicle emissions model (CARB, 2003) were used. For off-road vehicles, Tier 1 emission factors from the USEPA's non-road engine modeling guidelines (USEPA, 2002) were used. Fugitive dust emissions were calculated using emission factors prepared by the USEPA (USEPA, 1995; USEPA, 1998) and by the Midwest Research Institute for the SCAQMD (MRI, 1996). The calculated emissions for the project were then compared to the significance criteria (defined below).

#### **Criteria for Determining Significance**

Project-related air emissions would have a significant effect if they resulted in concentrations that create either a violation of an ambient air quality standard (as identified in Table 3.2-1) or significantly contribute to an existing air quality violation. Should ambient air quality already exceed existing standards, the SCAQMD has established specific significance threshold criteria to account for the continued degradation of local air quality. Table 3.2-5 presents the allowable contaminant generation rates at which construction and operational emissions are considered to have a significant regional effect on air quality throughout the SCAB.

**Table 3.2-5. Regional Significance Thresholds**

Air Pollutant	Construction Phase	Operational Phase
	(lbs/day)	(lbs/day)
Volatile Organic Compounds (VOCs)	75	55
Carbon Monoxide (CO)	550	550
Nitrogen Oxides (NO <sub>x</sub> )	100	55
Sulfur Oxides (SO <sub>x</sub> )	150	150
Particulates (PM <sub>10</sub> )	150	150

Source: SCAQMD, 1993.

Note: The SCAQMD no longer requires construction activities to be evaluated by quarterly thresholds (SCAQMD, 2001).

Note that ozone and PM<sub>2.5</sub> are not included in Table 3.2-5. Ozone is not directly emitted from stationary or mobile sources; rather it is formed as the result of chemical reactions in the atmosphere between directly emitted air pollutants, specifically oxides of nitrogen (NO<sub>x</sub>) and volatile organic compounds (VOCs). Therefore, it cannot be directly regulated. PM<sub>2.5</sub> is not included as it is currently in the beginning stages of becoming regulated, and as such, thresholds have not yet been developed.

For this analysis, the proposed project may also result in significant impacts if:

- Criterion AQ-1: The proposed project would generate emissions of air pollutants that would exceed the SCAQMD emission thresholds (Table 3.2-5).
- Criterion AQ-2: The project would expose sensitive receptors to substantial pollutant concentrations.
- Criterion AQ-3: The project would contribute air emissions to the region, which would be cumulatively considerable.

As discussed in the Initial Study (see Appendix A.2), the proposed project would not conflict with or obstruct implementation of an applicable air quality plan, and odor emissions associated with the proposed project would be less than significant. Therefore, these issues are not discussed further in this EIR.

## **Project Impacts**

### **Emissions That Exceed Thresholds (Criterion AQ-1)**

**Construction.** Construction of the Lower Reach River Supply Conduit Project would result in short-term impacts to ambient air quality in the study area during construction. Temporary construction emissions would result from on-site construction, such as open trench and pipe jacking activities. Emissions would also result from off-site construction activities from construction related haul trips and construction worker commuting patterns. Pollutant emissions would vary from day to day depending on the level of activity, the specific construction activities, the location of the construction sites, and the prevailing weather.

Table 2-3 of the Project Description presents the project construction schedule per construction unit. As a worse-case scenario, four open trench and three jacking operations are anticipated to occur simultaneously at four pipeline construction route units (i.e., Units 1a, 1b, 3, and 4) during the peak construction period (LADWP, 2004c). Therefore, maximum daily construction emissions associated with the proposed project are estimated based on the activities of these units. On-site heavy construction equipment would include machinery such as backhoes, forklifts, loaders, excavators, compactors, cranes, and welding trucks.

During construction of the proposed project (see Appendix D, Table D-3), it is estimated that a total of approximately 100 personnel would be employed during the peak construction period. Up to 83 construction

workers (assuming a 1.2 rideshare/other transportation factor) would drive private vehicles to the project sites each workday, averaging approximately 30 miles per trip. Additionally, it is assumed that a total of 366 haul truck trips would be required to deliver construction equipment and materials to the project sites each workday. The daily haul truck trip estimates include: 61 trips for each of four concurrent open trench construction areas to deliver materials such as sand, backfill, and steel pipe; two trips per open trench construction area for water and welding trucks; 36 trips for each of three concurrent jacking/tunneling construction areas to haul waste and deliver material; and two trips for water and welding trucks per jacking/tunneling construction area. For the purposes of this air quality analysis, it is assumed that the haul truck trips would average approximately 20 miles per trip.

Table 3.2-6 presents the estimated total maximum (worst-case) mitigated daily construction emissions for the proposed project. Emission estimates assume the use of Tier 1 non-road diesel engines and properly maintained equipment, use of low sulfur fuel, maximum idling times of five minutes, and implementation of Rule 403 measures (see Mitigation Measures discussion below). Maximum daily construction emission calculations and assumptions are presented in Appendix D.

**Table 3.2-6. Mitigated Maximum Daily Construction Emissions (lbs/day)**

	CO	NO <sub>x</sub>	PM <sub>10</sub>	SO <sub>x</sub>	VOC
<b>On-Site</b>					
Construction Equipment	197.86	394.11	23.85	3.23	33.21
Fugitive Dust	---	---	11.15	---	---
<b>Off-site</b>					
Worker Travel	34.67	3.71	0.20	0.02	3.73
Truck Deliveries	140.07	195.85	3.54	1.82	20.34
Road Dust	---	---	208.84	---	---
<b>Total Emissions</b>	<b>372.61</b>	<b>593.67</b>	<b>247.58</b>	<b>5.07</b>	<b>57.28</b>
<b>Emissions Thresholds</b>	<b>550</b>	<b>100</b>	<b>150</b>	<b>150</b>	<b>75</b>

As shown in Table 3.2-6, daily construction emissions would not be significant for CO, SO<sub>x</sub>, or VOC. However, with regard to NO<sub>x</sub> and PM<sub>10</sub>, the proposed project would result in mitigated emissions that are greater than the SCAQMD's construction emissions thresholds. It is possible that the conservative paved road dust calculation procedures used to determine the off-site emission potential may significantly overestimate the paved road dust emission potential and the actual daily PM<sub>10</sub> emissions may never exceed 150 lbs/day. However, no mitigation measure or change in calculation procedures, other than a drastic change in the construction schedule, could reduce the NO<sub>x</sub> emissions below the SCAQMD significant emission threshold. Therefore, construction of the proposed project would result in significant air quality impacts.

Implementation of the following mitigation measures would reduce impacts associated with construction of the Lower Reach RSC Project to the extent feasible:

**AQ-1** LADWP shall implement the following measures, in addition to/or as required by SCAQMD Rule 403, to reduce PM<sub>10</sub> emission during construction:

- Ground cover will be replaced in disturbed areas as quickly as possible;
- Active sites will be watered at least twice daily;



- 
- All dirt hauling trucks will have tightly secured coverings;
  - Trenching and excavation activities will be suspended during first and second stage smog alerts, and when wind speeds exceed 25 mph;
  - After clearing, trenching, earth moving, or excavation is completed, the entire area of disturbed soil will be treated. Treatment, which will also occur during non-work days if necessary, will include watering, revegetating, or use of soil binders to prevent wind pick-up of the soil until the area is paved or otherwise developed to preclude dust generation and dispersion;
  - Construction management techniques, including reducing the number of pieces of equipment used simultaneously and increasing the distance between the emission sources, will be employed as feasible to reduce potential emissions; and
  - Street sweeping or washing will be performed at the conclusion of each workday and when needed.

**AQ-2** LADWP shall implement the following mitigation measures to reduce NO<sub>x</sub> and PM<sub>10</sub> emissions from non-road construction vehicles during construction:

- Tier 1 mobile construction equipment shall be used on-site;
- Construction equipment shall be maintained in tune per manufacturer's specifications;
- California Air Resources Board certified ultra low sulfur diesel fuel containing 15 ppm sulfur or less shall be used for on-site mobile and stationary construction equipment; and
- Diesel engine idle time shall be restricted to no more than five minutes, except for construction equipment that needs to be maintained at idle to perform.

Implementation of Mitigation Measures AQ-1 and AQ-2 would reduce construction related air quality impacts; however, due to the magnitude of the construction activities, the air pollutant emissions impacts would continue to be significant and unavoidable. A Statement of Overriding Considerations would be required for construction of the Lower Reach RSC Project.

**Operation.** Once operational, the proposed project would not result in local emissions above those currently generated by the existing Lower Reach RSC pipeline system. Inspection and maintenance activities would be limited to periodic inspections of the isolation, air, and vacuum valves, as well as testing the isolation valves. These activities would result in periodic vehicle trips that would generate negligible emissions over the life of the project. Operations of the proposed project would not generate pollutants in excess of SCAQMD emission thresholds. Therefore, air quality impacts from operations of the proposed project would be less than significant and no mitigation measures would be required.

#### **Exposure of Sensitive Receptors to Substantial Pollutant Concentrations (Criterion AQ-2)**

Construction of the proposed project would likely result in exposing sensitive receptors to significant pollutant concentrations. While detailed air quality modeling was not performed, it is anticipated that during construction the ambient concentrations of PM<sub>10</sub> will from time to time exceed the 24-hour standard of 50 µg/m<sup>3</sup>. The project's PM<sub>10</sub> emissions, particularly at residences and other sensitive receptor locations that may be located within 100 meters or less along the construction route, may cause significant contributions to existing PM<sub>10</sub> ambient air quality standard violations. Therefore, construction of the proposed project would result in temporary significant air quality impacts to sensitive receptors. Implementation of Mitigation Measures AQ-1 and AQ-2 would reduce the impacts to sensitive receptors during construction of the proposed project; however, impacts would still be considered significant.

---

### **3.2.5 Level of Significance After Mitigation**

Implementation of Mitigation Measures AQ-1 and AQ-2 would reduce construction related air quality impacts; however, due to the magnitude of the construction activities the air pollutant emissions would continue to be significant and unavoidable. A Statement of Overriding Considerations would be required for construction of the Lower Reach RSC Project.

### **3.2.6 Cumulative Impacts**

#### **Air Emissions that are Cumulatively Considerable (Criterion AQ-3)**

Operation of the proposed project would result in periodic vehicle trips associated with inspection and maintenance activities that would generate negligible emissions over the life of the project. Therefore, the focus of this cumulative impact discussion is based on short-term construction impacts. The majority of construction for the proposed project is expected to occur from mid-October 2005 to early September 2008 (LADWP, 2005a). Other construction projects identified within the SCAB and within approximately 2.5 miles of the proposed project corridor include various land development (e.g., mixed uses, office buildings, residential, etc.), transportation infrastructure (e.g., on-ramp construction, etc.), utility infrastructure (e.g., Upper Reach RSC Project), and other redevelopment projects (see Section 2.8, Cumulative Projects).

Emissions from these projects would only have the potential to cause cumulatively significant impacts if they were constructed concurrently with the Lower Reach RSC pipeline. Several of the cumulative projects identified in Section 2.8 would be constructed at least partly during the construction period of the proposed project. In addition, it is anticipated that the majority of the projects would involve some level of ground disturbance, such as grading and trenching, that would result in at least moderate levels of diesel exhaust emissions and fugitive dust. Therefore, the cumulative projects identified in Section 2.8 could further exacerbate the projected short-term significant air quality impacts identified for the proposed project if they were constructed at the same time. Cumulative impacts are considered to be significant and unavoidable.

---

## 3.3 Noise and Vibration

This section addresses noise and vibration impacts that would result from the proposed project. Section 3.3.1 provides an introduction to the aspects of noise, Sections 3.3.2 and 3.3.3 present summaries of the regulatory and environmental settings, Section 3.3.4 presents impacts and mitigation, Section 3.3.5 describes the levels of significance after mitigation, and Section 3.3.6 presents the cumulative impacts.

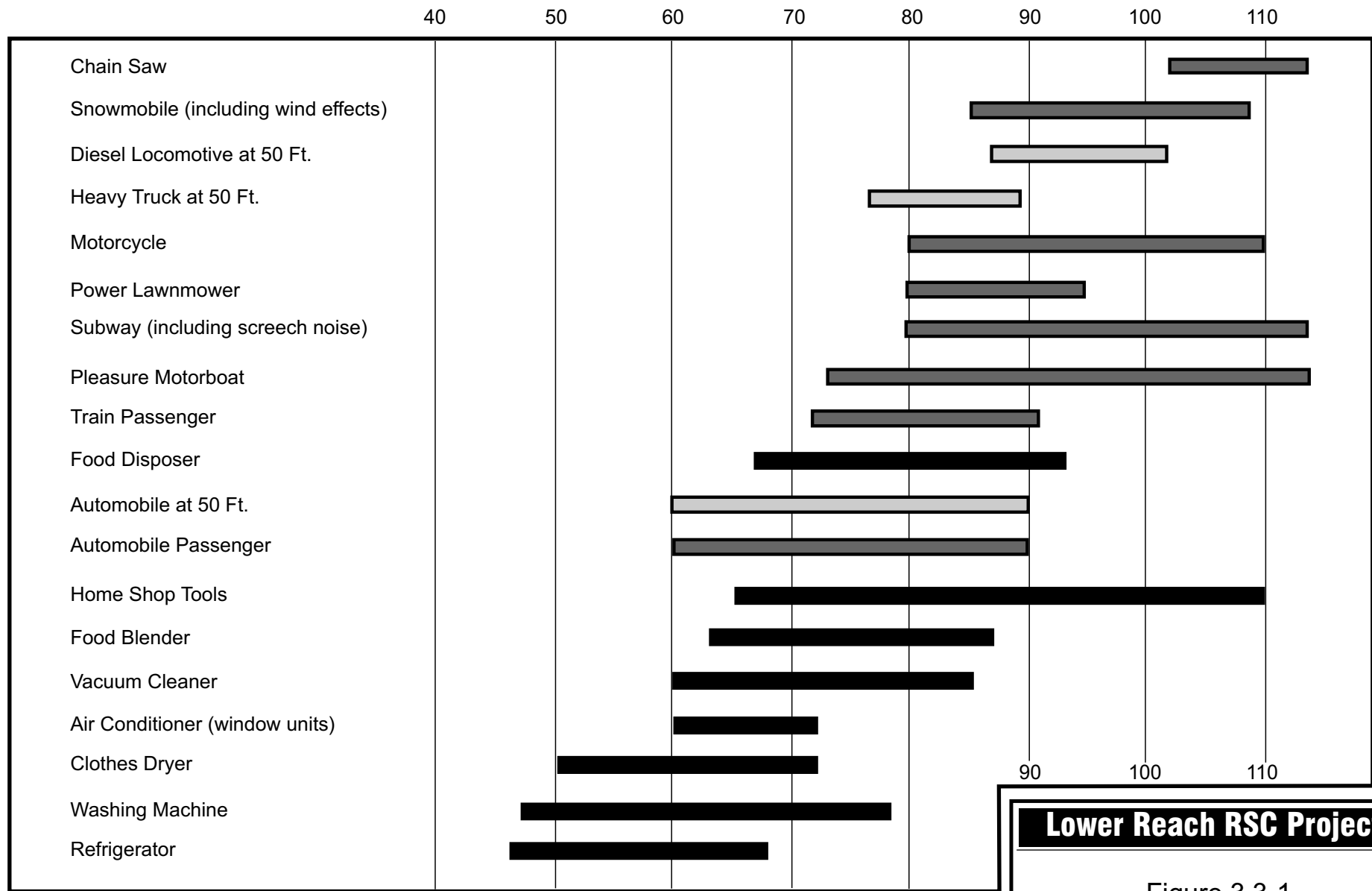
### 3.3.1 Introduction




To describe environmental noise and to assess impacts on areas sensitive to community noise, a frequency weighting measure that simulates human perception is customarily used. The frequency weighting scale, known as A-weighting, best reflects the human ear's reduced sensitivity to low frequencies and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. Decibels are logarithmic units that conveniently compare the wide range of sound intensities to which the human ear is sensitive. Figure 3.3-1 illustrates typical ranges of common sounds heard in the community noise environment.

The community noise environment and the consequences of human activities cause noise levels to be widely variable over time. For simplicity, sound levels are usually best represented by an equivalent level over a given time period ( $L_{eq}$ ) or by an average level occurring over a 24-hour day-night period ( $L_{dn}$ ). The  $L_{eq}$ , or equivalent sound level, is a single value for any desired duration (usually one hour), which includes all of the time-varying sound energy in the measurement period. The  $L_{dn}$ , or day-night average sound level, is equal to the 24-hour equivalent sound level (in dBA) with a 10 dBA penalty applied to nighttime sounds occurring between 10:00 p.m. and 7:00 a.m.

Community noise levels are usually closely related to the intensity of nearby human activity. Figure 3.3-2 illustrates the typical noise levels of varying types of land use. Noise levels are generally considered low when ambient levels are below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. In wilderness areas, the  $L_{dn}$  noise levels can be below 35 dBA. In small towns or wooded and lightly used residential areas, the  $L_{dn}$  is more likely to be around 50 or 60 dBA. Levels around 75 dBA are more common in busy urban areas (e.g., downtown Los Angeles), and levels up to 85 dBA occur near major freeways and airports. Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, they nevertheless are considered to be adverse to public health.

The surrounding land uses dictate what noise levels would be considered acceptable or unacceptable. Lower levels are expected in rural or suburban areas than what would be expected for commercial or industrial zones. Nighttime ambient levels in urban environments are generally about seven decibels lower than the corresponding daytime levels. In rural areas away from roads and other human activity, the day-to-night difference can be considerably less. Areas with full-time human occupation that are subject to nighttime noise are often considered objectionable because of the likelihood of disrupting sleep. Noise levels above 45 dBA at night can result in the onset of sleep interference effects. At 70 dBA, sleep interference effects become considerable (USEPA, 1974).



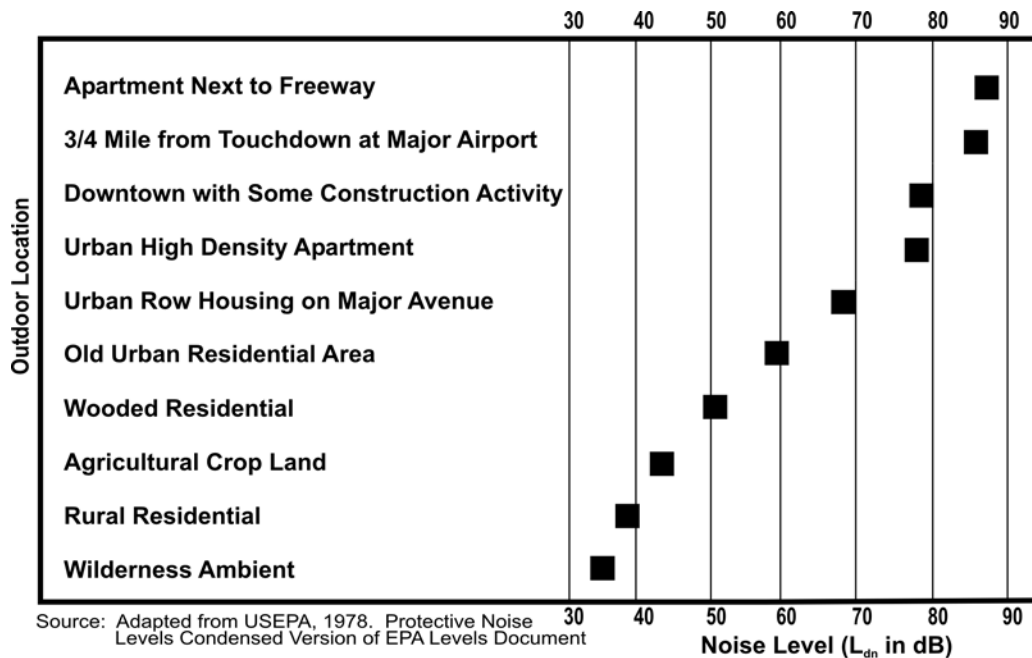
MEASUREMENT LOCATION	
Outdoors	
Operator/Passenger	
In Home	

Source: USEPA, 1978. Protective Noise Levels  
Condensed Version of EPA Levels Document

**Lower Reach RSC Project**

Figure 3.3-1  
**Typical Range of  
Common Sounds  
Heard in the Environment**

**Aspen**  
Environmental Group



**Figure 3.3-2: Examples of Outdoor Day-Night (L<sub>dn</sub>) Average Sound Levels in dB Measured at Various Locations**

### 3.3.2 Regulatory Setting

Ground-borne vibration is not commonly regulated by local municipalities, except as it might cause a nuisance or annoyance. Ground-borne vibration that is perceptible by humans may be above the levels that would adversely affect high precision equipment, but may also be below the levels that could cause damage to nearby structures. As such, if people in residences feel ground-borne vibration, it does not necessarily mean that the integrity of a structure is being compromised. Vibration that is perceptible by people in nearby buildings would qualify as a nuisance and may be limited by broad prohibitions of local ordinances.

Regulating environmental noise is generally the responsibility of local governments. The USEPA once published guidelines on recommended maximum noise levels to protect public health and welfare (USEPA, 1974), and the State of California maintains recommendations for local jurisdictions in the General Plan Guidelines published by the Governor’s Office of Planning and Research (OPR, 1998). The following summarizes the federal and State recommendations and the local requirements.

#### Federal and State Standards

There are no federal noise standards that directly regulate environmental noise. Table 3.3-1 provides a summary of recommended noise levels for protecting public health and welfare with an adequate margin of safety. With regard to noise exposure and workers, the federal Occupational Safety and Health Administration (OSHA) establishes regulations to safeguard the hearing of workers exposed to occupational noise (29 CFR Section 1910.95, Code of Federal Regulations).

**Table 3.3-1. Examples of Protective Noise Levels Recommended by USEPA**

Effect	Maximum Level	Exterior or Interior Area
Hearing loss	$L_{eq}(24) < 70$ dB	All areas.
Outdoor activity interference and annoyance	$L_{dn} < 55$ dB	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	$L_{eq}(24) < 55$ dB	Outdoor areas where people spend limited amounts of time, such as schoolyards, playgrounds, etc.
Indoor activity interference and annoyance	$L_{dn} < 45$ dB	Indoor residential areas.
	$L_{eq}(24) < 45$ dB	Other indoor areas with human activities such as schools, etc.

Source: USEPA, 1974.

$L_{eq}(24)$  = Represents the sound energy averaged over a 24-hour period.

$L_{dn}$  = Represents the  $L_{eq}$  with a 10 dB nighttime penalty.

The State of California requires each local government to perform noise surveys and implement a noise element as part of their general plan. Table 3.3-2 shows the State guidelines for evaluating the compatibility of various land uses as a function of noise exposure.

### Local Noise Ordinances and Policies

The proposed project alignment would be located within the City of Los Angeles and would be subject to the noise policies and standards of the City of Los Angeles General Plan and noise ordinances. The Los Angeles Municipal Code § 41.40 indicates that no construction or repair work shall be performed between the hours of 9:00 p.m. and 7:00 a.m. of the following day because such activities would generate loud noises and disturb persons occupying sleeping quarters in any adjacent dwelling, hotel, apartment, or other place of residence. In addition, no person, other than an individual homeowner engaged in the repair or construction of his single-family dwelling, shall perform any construction or repair work of any kind within 500 feet of residential buildings before 8:00 a.m. or after 6:00 p.m. on any Saturday, national holiday, or at any time on Sunday.

The Los Angeles Municipal Code §112.05 specifies the maximum noise level for powered equipment or powered hand tools. It states that any powered equipment or powered hand tool that produces a maximum noise level exceeding 75 dBA at a distance of 50 feet from construction or industrial machinery 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 shall be prohibited. However, the above noise limitation shall not apply where compliance is technically infeasible. Technically infeasible means that the above noise limitation cannot be complied with despite the use of mufflers, shields, sound barriers, and/or any other noise reduction device or techniques during the operation of equipment.

### 3.3.3 Environmental Setting

#### Noise Environment in the Project Area

**Ambient Noise Levels.** A wide range of noise sources occur in the project area, mainly due to the wide range of land uses that are traversed by the alignment. The primary noise source in the project area is traffic noise from the major streets serving the project area. Secondary noise may result from commercial and institutional activities (e.g., truck deliveries), airport noise associated with Bob Hope Airport (formerly

known as Burbank-Glendale-Pasadena Airport), and residential noise sources (e.g., passenger vehicles and landscape maintenance operations).

**Table 3.3-2. Land Use Compatibility for Community Noise Environment**

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE – L <sub>dn</sub> or CNEL (db)						
	50	55	60	65	70	75	80
Residential - Low Density Single Family, Duplex, Mobile Home	[Solid Black]			[Vertical Lines]		[Diagonal Lines]	
	[Solid Black]			[Vertical Lines]		[Diagonal Lines]	
	[Solid Black]			[Vertical Lines]		[Diagonal Lines]	
Residential - Multi-Family	[Solid Black]			[Vertical Lines]		[Diagonal Lines]	
	[Solid Black]			[Vertical Lines]		[Diagonal Lines]	
	[Solid Black]			[Vertical Lines]		[Diagonal Lines]	
Transient Lodging - Motel, Hotel	[Solid Black]			[Vertical Lines]		[Diagonal Lines]	
	[Solid Black]			[Vertical Lines]		[Diagonal Lines]	
	[Solid Black]			[Vertical Lines]		[Diagonal Lines]	
Schools, Libraries, Churches, Hospitals, Nursing Homes	[Solid Black]			[Vertical Lines]		[Diagonal Lines]	
	[Solid Black]			[Vertical Lines]		[Diagonal Lines]	
	[Solid Black]			[Vertical Lines]		[Diagonal Lines]	
Auditorium, Concert Hall, Amphitheaters	[Vertical Lines]			[Diagonal Lines]		[Diagonal Lines]	
	[Vertical Lines]			[Diagonal Lines]		[Diagonal Lines]	
	[Vertical Lines]			[Diagonal Lines]		[Diagonal Lines]	
Sports Arena, Outdoor Spectator Sports	[Vertical Lines]			[Diagonal Lines]		[Diagonal Lines]	
	[Vertical Lines]			[Diagonal Lines]		[Diagonal Lines]	
	[Vertical Lines]			[Diagonal Lines]		[Diagonal Lines]	
Playgrounds, Neighborhood Parks	[Solid Black]			[Diagonal Lines]		[Diagonal Lines]	
	[Solid Black]			[Diagonal Lines]		[Diagonal Lines]	
	[Solid Black]			[Diagonal Lines]		[Diagonal Lines]	
Golf Courses, Riding Stables, Water Recreation, Cemeteries	[Solid Black]			[Diagonal Lines]		[Diagonal Lines]	
	[Solid Black]			[Diagonal Lines]		[Diagonal Lines]	
	[Solid Black]			[Diagonal Lines]		[Diagonal Lines]	
Office Buildings, Business Commercial and Professional	[Solid Black]			[Diagonal Lines]		[Diagonal Lines]	
	[Solid Black]			[Diagonal Lines]		[Diagonal Lines]	
	[Solid Black]			[Diagonal Lines]		[Diagonal Lines]	
Industrial, Manufacturing, Utilities, Agriculture	[Solid Black]			[Diagonal Lines]		[Diagonal Lines]	
	[Solid Black]			[Diagonal Lines]		[Diagonal Lines]	
	[Solid Black]			[Diagonal Lines]		[Diagonal Lines]	

	<b>Normally Acceptable.</b> Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
	<b>Conditionally Acceptable.</b> New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design.
	<b>Normally Unacceptable.</b> New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
	<b>Clearly Unacceptable.</b> New construction or development generally should not be undertaken.

Source: State of California General Plan Guidelines, Office of Planning and Research, November 1998.

---

Noise measurements were recorded at six locations along the proposed Lower Reach pipeline route, as shown on Figure 3.3-3. The noise levels listed in Table 3.3-3 provide a representative sample of ambient noise conditions along the proposed route. Noise conditions are described in terms of: Equivalent Sound Level ( $L_{eq}$ ), the average level of sound determined over a specific period of time (in this case 15 minutes); the maximum sound level ( $L_{max}$ ) reached during a sampling period; and the minimum sound level ( $L_{min}$ ) reached during a sampling period. As described in Table 3.3-1, existing average ambient noise levels in the vicinity of the proposed pipeline route ranged between 55.5 dBA and 64.2 dBA.

**Sensitive Receptors.** Noise sensitive receptors are facilities or areas (e.g., residential areas, hospitals, schools, sound studios, etc.) where excessive noise may convey annoyance or loss of business. A land use survey along the proposed Lower Reach pipeline route was conducted to identify sensitive receptors in the general vicinity of the proposed project. Residential receptors are dispersed along Units 3 and 4. Within Units 1a, 1b, and 2 (Griffith Park area), residences are not immediately adjacent to the proposed route. Ivanhoe Elementary School, Silver Lake Presbyterian Church, and Forest Lawn Cemetery exist along the proposed route. In addition, Disney Studios is in close proximity to the proposed Lower Reach pipeline route. For a complete listing of all land uses along the proposed pipeline route, refer to the Initial Study Land Use Section, Table 3.9-1 (Appendix A.2).

### **3.3.4 Impacts and Mitigation Measures**

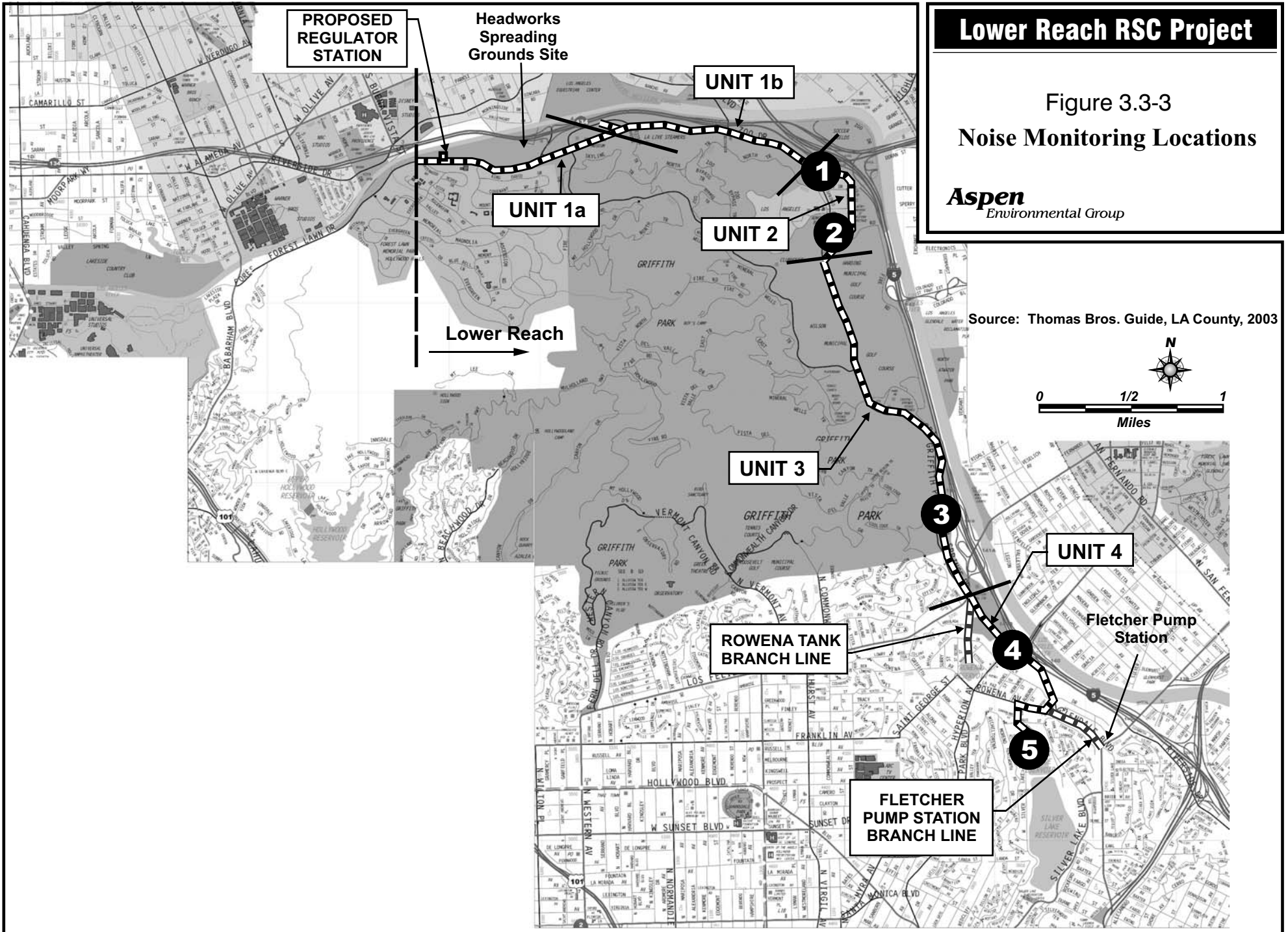
#### **Criteria for Determining Significance**

Significance of noise impacts depends on whether the proposed project would increase noise levels above the existing ambient levels by introducing new sources of noise. For this analysis, the proposed project would be considered significant if the project would result in:

- Criterion N-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.
- Criterion N-2: A substantial temporary or periodic increase in ambient noise levels in the project vicinity above noise levels existing without the project.
- Criterion N-3: Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- Criterion N-4: Would result in noise levels in the project area, which would be cumulatively considerable.

As discussed in the Initial Study (see Appendix A.2), the proposed project would result in no impacts related to permanent increases in ambient noise levels (Section 3.11(c)) and would not expose people residing or working in the project area to municipal or private airport noise (Section 3.11 (e) and (f)). Therefore these issues are not discussed further in this EIR.





**Lower Reach RSC Project**

Figure 3.3-3  
Noise Monitoring Locations

*Aspen*  
Environmental Group

Source: Thomas Bros. Guide, LA County, 2003

**Table 3.3-3. Ambient Noise Levels Representative of the Project Area**

Location		Survey Period	Leq	Lmax	Lmin	Notes
#	Description					
1	Unit 1b. South side of Zoo Drive east of Western Avenue in front of a large picnic area within Griffith Park.	9:10 a.m. to 9:25 a.m.	57.1	69.0	48.4	Moderate to light vehicle traffic on Zoo Drive, primarily passenger vehicles. Approximately 25 people using picnic facilities.
2	Unit 2. West side of Zoo Drive at Los Angeles Zoo entrance.	10:00 a.m. to 10:15 a.m.	55.5	67.6	47.1	Light vehicle traffic on Zoo Drive. Zoo entrance driveway approximately 25' from location. Light vehicle traffic noted in Zoo lot (non-gated entrance).
3	Unit 3. East side of Crystal Springs Drive north of Griffith Park Equestrian Park entrance.	10:40 a.m. to 10:55 a.m.	56.1	66.2	46.6	Light vehicle traffic on Crystal Springs Drive. Light vehicle traffic noted at Park lot (non-gated entrance). Light use noted at Picnic area.
4	Unit 4. Southwest side of Riverside Drive north of Hyperion Avenue taken in front of a multi-family housing unit.	11:30 a.m. to 11:45 a.m.	64.2	77.6	53.3	Moderate vehicle traffic on Riverside. Vehicle speeds at this location were approximately 50-55 mph.
5	Fletcher Pump Station Branch Line. Intersection of Silverlake Reservoir Drive and Armstrong Avenue in a residential neighborhood.	1:15 p.m. to 1:30 p.m.	58.3	70.5	47.5	Light traffic occurring during the reading. Armstrong Avenue south of this location was blocked due to DWP trenching construction occurring within Armstrong Avenue approximately 300' from measurement.

Notes: All measurements are in dBA; Measurements recorded on June 22, 2004.

Leq = Equivalent Sound Level, a measurement (in this case 15 minutes) that accounts for the moment-to-moment fluctuations due to all sound sources during the measurement period, combined.

Lmax = The maximum sound level reached during a sampling period

Lmin = The minimum sound level reached during a sampling period

## Project Impacts

### Exposure of persons to or generation of noise levels in excess of standards (Criterion N-1)

**Construction.** Construction noise would be created from on-site and off-site sources. Construction activity would generally occur between 7:00 a.m. and 6:00 p.m. Monday through Friday and 8:00 a.m. to 5:00 p.m. on Saturday. However, within Griffith Park along portions of Crystal Springs Drive, construction activities may occur up to 24-hours per day. On-site noise during construction would occur primarily from heavy-duty diesel and gasoline-powered construction equipment, such as backhoes and loaders. Off-site noise would be generated from trucks delivering materials and equipment to the job-sites, as well as from vehicles used by workers commuting to and from the job sites.

Land uses along the proposed pipeline route are primarily residential, commercial, recreational, and open space. During construction, residences in the vicinity of construction activities would be exposed to potentially significant noise levels generated by heavy construction equipment operating within the construction zones. The majority of the pipeline would be constructed at a maximum rate of approximately 80 feet per day (open trench excavation). Any one receptor adjacent to an open trench construction area

could experience adverse noise levels for approximately one week. Receptors adjacent to jacking or tunneling construction zones could be exposed to adverse noise levels for several weeks.

On-site sources would include the operation of heavy construction equipment during activities such as open trenching, jacking, and tunneling. Table 3.3-4 presents the typical peak noise levels that would be produced by most of the heavy equipment required to construct the new pipeline. Generally, noise levels at receptor locations adjacent to the active construction areas can be expected to average from 70 to 80 dBA, depending on the distance the receptor is from the source of noise. Noise levels from off-site construction related traffic (delivery trucks, automobiles, and haul trucks) would be potentially adverse (approximately 70 dBA to 80 dBA at 50 feet).

**Table 3.3-4. Noise Emission Characteristics of Construction Equipment**

Type of Equipment	Peak Noise Level, dBA at 50 feet
Backhoe	80
Compactor	82
Crane, Mobile	83
Saw	76
Jack Hammer	88
Excavator/Shovel	82
Loader	85
Paver	89
Truck	88

Source: FTA, 1995.

Within and immediately adjacent to residential zones, unmitigated construction noise levels would likely violate Section 112.05 of the Los Angeles Municipal Code, resulting in periodic exposure to noise levels at or above 75 dBA, which would result in potentially significant impacts. Unmitigated nighttime construction activity proposed to occur along the southern portion of Unit 3 (Crystal Springs Drive) would likely violate Section 41.40 of the Los Angeles Municipal Code, potentially resulting in significant impacts to residences in the area. Implementation of Mitigation Measures N-1 through N-6 (see below) would reduce potentially significant short-term construction noise level impacts to less-than-significant levels.

**Operation.** Once operational, the proposed project would not result in noise levels above those currently generated by the existing Lower Reach RSC pipeline system, with the exception of the new regulator station. The maximum noise level expected at the regulator station valve would be no more than 115 dB (LADWP, 2004d). While this would be a potentially adverse noise impact (greater than 75 dBA), no sensitive receptors are located in the vicinity of the proposed regulator station (Headworks Spreading Grounds), and LADWP employees would be required, per OSHA (29 CFR Section 1910.95, Code of Federal Regulations), to wear hearing protection if working nearby. Therefore, noise impacts from operations of the proposed project would be less than significant and no mitigation measures would be required.

**Substantial Temporary or Periodic Increases in Ambient Noise Levels (Criterion N-2)**

**Construction.** In addition to potential conflicts with applicable ordinances and standards, unmitigated noise levels associated with construction of the proposed project have the potential to cause substantial temporary increases in ambient noise levels in the project vicinity above existing noise levels without the project. As described in Table 3.3-3, average ambient noise levels were found to vary between average  $L_{eq}$  values of approximately 55 and 64 dBA and maximum noise levels ranged from 66 to 78 dBA. Assuming average unmitigated construction noise levels range from 70 to 80 dBA, temporary increases in ambient noise levels could be as low as 0 dBA and as high as 25 dBA.

---

The actual magnitude of construction noise impacts would depend on the type of construction activity, the noise level generated by various pieces of construction equipment, the duration of the activity, the distance between the activity and the sensitive noise receptors, and whether local barriers and topography provide shielding effects.

Implementation of the following mitigation measures would reduce short-term noise impacts associated with construction of the proposed project to levels that are less than significant:

- N-1** LADWP or its construction contractor shall provide advance notice, between two and four weeks prior to construction, by mail to all residents or property owners within 100 feet of the pipeline alignment. The announcement shall state specifically where and when construction will occur in the area. If construction delays of more than 7 days occur, an additional notice shall be made, either in person or by mail. Notices shall provide tips on reducing noise intrusion, for example, by closing windows facing the planned construction. The LADWP shall also publish a notice of impending construction in local newspapers, stating when and where construction will occur.
- N-2** All noise-producing project equipment and vehicles using internal combustion engines shall be equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise reducing features kept in good operating condition that meet or exceed original factory specification. Mobile or fixed “package” equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and noise control features which are readily available for that type of equipment.
- N-3** All noise producing equipment in use along the project alignment shall be operated in the quietest manner possible. The equipment operator shall also avoid unnecessary equipment idling for long periods.
- N-4** The use of noise producing signals, including horns, whistles, alarms, and bells shall be for safety warning purposes only.
- N-5** Portable noise screens shall be used to provide additional shielding for jack hammering or other similar very noisy type activities when work is close to noise-sensitive areas.
- N-6** Nighttime construction activities (before 7:00 a.m. and after 9:00 p.m.) within Griffith Park shall comply with all Department of Recreation and Parks permit stipulations and shall not occur within 500 feet of residential buildings.

Implementation of Mitigation Measures N-1 through N-6 would reduce potentially significant construction noise impacts to levels that would be less than significant.

**Operation.** As discussed above for Criterion N1, potentially adverse noise impacts associated with the operation of the regulator station would be less than significant, as no sensitive receptors are located in the vicinity (Headworks Spreading Grounds) and LADWP employees would be required, per OSHA (29 CFR Section 1910.95, Code of Federal Regulations), to wear hearing protection if working nearby. Therefore, noise impacts from operations would be less than significant and no mitigation measures would be required.

---

### **Generation of Excessive Groundborne Vibration or Groundborne Noise (Criterion N-3)**

**Construction.** Vibration levels from heavy equipment transport, trenching, and jack hammering activities may be perceptible to residents or workers in structures in nearby commercial and residential areas immediately adjacent to the construction work. The peak vibration levels from construction activities, such as a heavy truck passing over large potholes or bumps, could produce perceptible vibration within about 50 feet. Although the detectability of ground-borne vibration is highly dependent on the soil type at the construction site, the type of equipment used, and the structure of the receptor, construction could cause annoyance for a sensitive receptor within about 50 feet of construction work. Implementation of Mitigation Measure N-1, above, would provide advance notice to nearby property owners, avoiding significant nuisances from vibration.

The motion picture industry is particularly sensitive to the impacts of noise and vibration. The proposed pipeline would be constructed across the Los Angeles River from Disney Studios in Burbank. Therefore groundborne vibration and noise would not be detectible to the studio. No impacts to the studio would occur.

**Operation.** Groundborne vibrations and noise associated with the operation of the regulator station would be less than significant, as no sensitive receptors are located in the vicinity (Headworks Spreading Grounds) and Disney Studios would be located away from the area of potential impact (across the Los Angeles River).

#### **3.3.5 Level of Significance After Mitigation**

Implementation of Mitigation Measures N-1 through N-6 would reduce potentially significant construction noise impacts to levels that would be less than significant.

#### **3.3.6 Cumulative Impacts**

##### **Noise levels that are cumulatively considerable (Criterion N-4)**

Because the proposed project would result in less than significant impacts related to permanent increases in ambient noise levels, the focus of this cumulative impact discussion is based on short-term construction impacts. The majority of construction for the proposed project is expected to occur from mid-October 2005 to early September 2008 (LADWP, 2005a). Other construction projects that will be within approximately 2.5 miles of the proposed project corridor include various land development (e.g., mixed uses, office buildings, residential, etc.), transportation infrastructure (e.g., on-ramp construction, etc.), utility infrastructure (e.g., Upper Reach RSC Project), and other redevelopment projects (see Section 2.8, Cumulative Projects). In localized areas where project construction may occur simultaneously, noise generated from the projects would have a cumulative impact on sensitive receptors. Construction of the cumulative projects could further exacerbate the short-term potentially significant noise and vibration impacts associated with the construction of the proposed project. However, mitigation measures identified for the proposed project (Impacts N1, N2, and N3) would reduce the proposed project impacts to less-than-significant levels. Additionally, cumulative projects identified in Section 2.8 would be required to comply with local noise ordinances. Therefore, cumulative noise impacts would be less than significant.

## 4. Alternatives Analysis

---

### 4.1 Introduction and Overview

CEQA requires that an EIR describe a range of reasonable alternatives to the project, or to the location of the project, which could feasibly avoid or lessen any significant environmental impacts while substantially attaining the basic objectives of the project. An EIR should also evaluate the comparative merits of the alternatives. This chapter sets forth potential alternatives to the proposed project and evaluates them, as required by CEQA.

Key provisions of the CEQA Guidelines (§15126.6) pertaining to the alternatives analysis are summarized below:

- *The discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.*
- *The “no project” alternative shall be evaluated along with its impact. The “no project” analysis shall discuss the existing conditions at the time the notice of preparation is published, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.*
- *The range of alternatives required in an EIR is governed by a “rule of reason”; therefore, the EIR must evaluate only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project.*
- *For alternative locations, only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR.*
- *An EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative.*

Alternatives usually take the form of no project, reduced project size, different project design, or suitable alternative project sites. The range of alternatives discussed in an EIR is governed by a “rule of reason” that requires the identification of only those alternatives necessary to permit a reasoned choice between the alternatives and the proposed project.

The range of feasible alternatives is selected and discussed in a manner to foster meaningful public participation and informed decision making. Among the factors that may be taken into account when addressing the feasibility of alternatives (as described in CEQA Guidelines §15126.6(f)(1)) are environmental impacts, site suitability, economic viability, availability of infrastructure, general plan consistency, regulatory limitations, jurisdictional boundaries, and whether the proponent could reasonably acquire, control, or otherwise have access to the alternative site. An EIR need not consider an alternative whose effects could not be reasonably identified, whose implementation is remote or speculative, and that would not achieve the basic project objectives.

### 4.2 Alternative Screening Process

As described in Section 2.2, the LADWP’s intention is to replace the existing Lower Reach RSC pipeline, which has provided over 50 years of continuous service to the City of Los Angeles. The primary objectives of the proposed project, as defined by the LADWP, are summarized as follows:

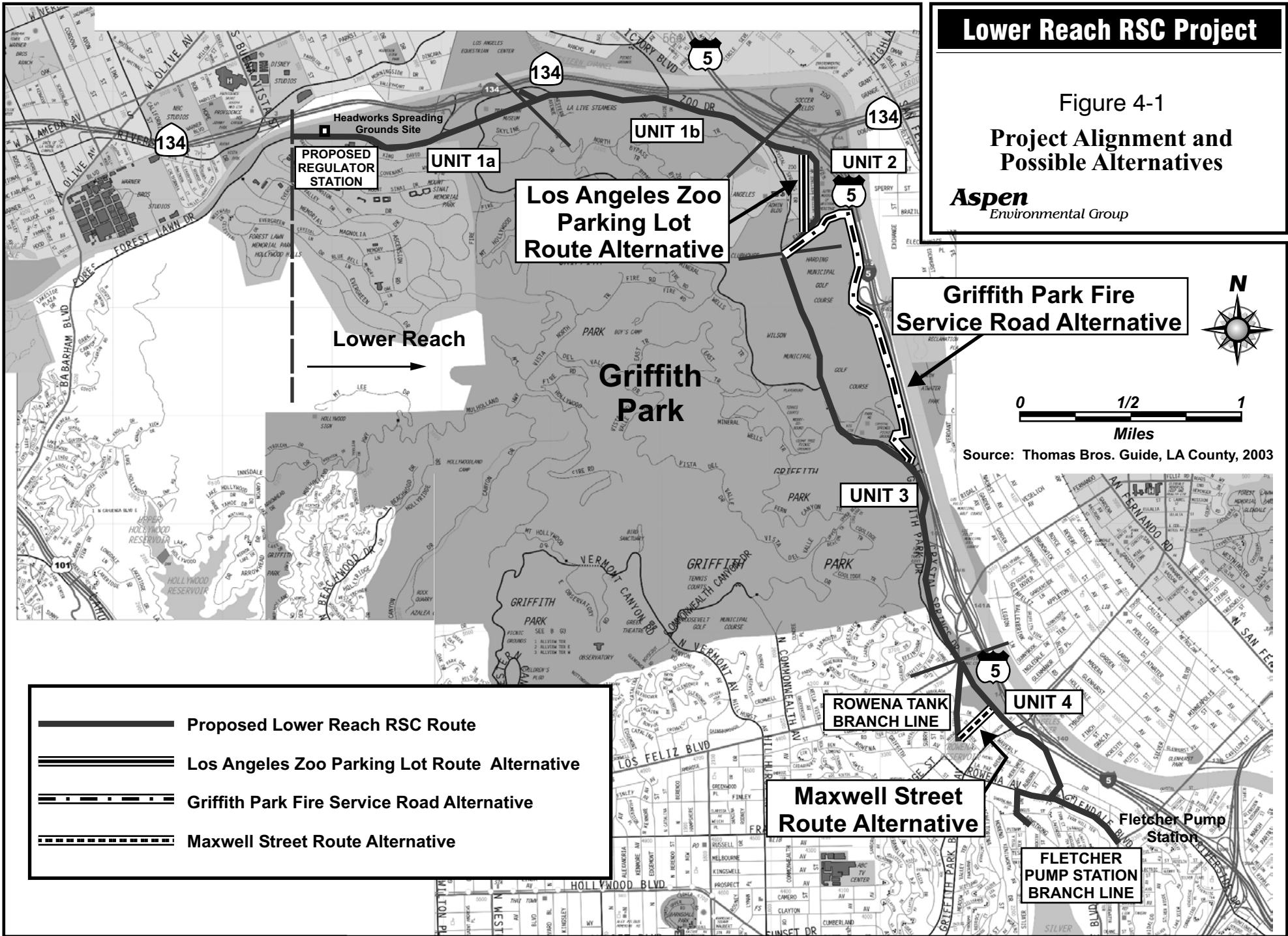
- 
- Provide a more reliable supply of water to the central area of the City of Los Angeles.
  - Provide a larger flow capacity to adequately meet the current water requirements of the City of Los Angeles.
  - Provide higher water pressure to meet California Department of Health Services Drinking Water Regulations.
  - Compensate for loss of water storage within the LADWP water distribution system.

For purposes of this analysis, the project alternatives have been evaluated to determine the extent to which they attain the basic project objectives, while lessening any significant environmental effects of the proposed project. The goal for evaluating the alternatives is to identify ways to lessen or avoid the significant environmental effects resulting from implementation of the proposed project.

The proposed project is a linear route where potential alternatives are limited by required connections to specific reservoirs, pump stations, and the headworks facility and by the surrounding built environment. Project development within Unit 4 already follows streets with minimal impact to residential development. Along Units 1a, 1b, 2, and 3, the project route is limited by Griffith Park to the immediate west and south, and by two major freeways (134 and I-5 freeways) to the immediate north and east. The only alternatives that can be identified for this project include those that would keep the pipeline route west of the I-5 freeway and south of the 134 freeway (see Figure 4-1). As such, there are no alternatives that propose a different pipeline alignment outside of Griffith Park because Griffith Park covers the majority of the pipeline route and because the freeways limit alternative locations. Within these limitations, the following alternatives have been identified:

- No Project – With this alternative, proposed project development would not occur; or the predictable or reasonably foreseeable circumstance that would result if the project did not proceed or was not approved would occur.
- Griffith Park Fire Service Road Route – This alternative evaluates the feasibility of constructing a section of RSC Unit 2 and 3 through an existing Griffith Park Fire Service Road traveling parallel to the I-5 freeway east of the Harding Municipal Golf Course.
- Los Angeles Zoo Parking Lot Route - This alternative evaluates the construction of RSC Unit 2 through the existing Los Angeles Zoo parking lot.
- Maxwell Street Route – This alternative evaluates the feasibility of constructing a connection to the Rowena Tank from Riverside Drive by tunneling under Maxwell Street as part of RSC Unit 4.

Figure 4-1 displays the location of each RSC Alternative. Of these alternatives, the Los Angeles Zoo Parking Lot and the Maxwell Street Route Alternatives were eliminated from further consideration because they would not reduce construction impacts, as discussed in Section 4.3. The other alternatives are discussed in Section 4.4.





---

## 4.3 Alternative Eliminated from Further Consideration

### 4.3.1 Los Angeles Zoo Parking Lot Route Alternative

The Los Angeles Zoo Parking Lot Route Alternative evaluates the construction of RSC Unit 2 through the existing Los Angeles Zoo parking lot. As with the proposed project, a short pipeline would travel from the RSC Unit 3, then travel through the Los Angeles Zoo parking lot, and would connect with Unit 1 along Western Heritage Way. It is assumed that a 60-inch diameter pipe would be laid using the open trench method through the parking lot.

Along this route, adjacent land uses surrounding the right-of-way include the Los Angeles Zoo and related uses to the west and parking to the east. The purpose of this alternative would be to reduce traffic impacts associated with the proposed RSC Unit 2 route while meeting the principal objectives of the project. Avoiding Western Heritage Way would not necessarily reduce all traffic impacts as delays may occur along this segment associated with a reduction in parking area for the Los Angeles Zoo. However, the Los Angeles Zoo Parking Lot Alternative would result in less intense traffic impacts during construction in comparison to the proposed project.

The major issue with this alternative is that by placing the new Lower Reach RSC pipeline within the Los Angeles Zoo parking lot, pedestrian safety and parking impacts to the Los Angeles Zoo would be more significant than the proposed project's impacts associated with potential traffic delays along Western Heritage Way. In order to ensure parking lot use and pedestrian access to the Zoo during construction of this alternative, the linear section of the route through the parking lot would need to be phased, thus resulting in an unnecessary increase to construction duration. As a result, environmental impacts would be greater with this alternative and would result in substantial disruption to the Los Angeles Zoo operations and access. Furthermore, recent construction occurred within the Los Angeles Zoo parking lot associated with the existing Lower Reach of the RSC pipeline as well as a recent redesign and upgrade to the parking lot. Further disruption of this area would not only continue impacting zoo parking but would also negatively impact the recent upgrades to the parking lot. Therefore, this alternative was eliminated from further consideration.

### 4.3.2 Maxwell Street Route Alternative

This alternative evaluates the feasibility of constructing a connection to the Rowena Tank as part of RSC Unit 4. A new tunnel would be constructed under private property from Riverside Drive southwest to Waverly Drive, and under Maxwell Street to the existing Rowena Tank. It is assumed that a 102-inch (8.5-foot) inside diameter tunnel would be required for tunneling an 80-inch diameter pipe. The purpose of this alternative would be to provide a shorter route to the Rowena Tank.

By not utilizing the existing Rowena Tunnel, a minimum 15-foot wide and 1,200-foot long easement on Maxwell Street and on the private properties between Riverside Drive and Waverly Drive would need to be obtained. Securing such an easement would take approximately 8 months. Other major issues associated with this alternative include the cost of tunneling at least 50 feet below grade and providing a tunnel support system to remove soil that supports existing substructures and/or foundations. Environmental impacts, such as air quality and land use, associated with creating a new tunnel under existing substructures and/or foundations would be greater than the proposed project. Therefore, this alternative was eliminated from further consideration.

---

## 4.4 Alternative Impact Analysis

The Griffith Park Fire Service Road Route Alternative is considered suitable for evaluation in this EIR due to its ability to meet the basic project objectives and potential to result in fewer significant environmental impacts than the proposed project. The potential environmental effects for this alternative and the No Project Alternative are presented below.

### 4.4.1 No Project Alternative

In addition to alternative development scenarios, CEQA Guidelines §15126.6(e) requires the analyses of a “no project” alternative. The no project analysis must discuss the existing condition, as well as what would be reasonably expected to occur in the foreseeable future if the project were not to be approved. Since the proposed project is a development project, CEQA Guidelines §15126.6(e)(3)(B) applies to the project.

If the project is ... a development project on an identifiable property, the “no project” alternative is the circumstance under which the project does not proceed. Here the discussion would compare the environmental effects of the property remaining in its existing state against environmental effects, which would occur if the project is approved. If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this “no project” consequence should be discussed. In certain instances, the “no project” alternative means “no build” wherein the existing environmental setting is maintained. However, where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project’s non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment.

The “No Project” alternative represents the *status quo*, or maintaining the project site in its current state, which currently contains the existing LADWP RSC water transmission pipeline. The no-project analysis must discuss the “no build” alternative, as well as what would be reasonably expected to occur in the foreseeable future if the proposed project were not approved, based on current plans and consistent with available infrastructure and community services.

Built in the 1940s, the existing RSC pipeline’s purpose is to transport large amounts of water from the Van Norman Complex (Los Angeles Reservoir) and local ground water wells to reservoirs and distribution facilities located in the central areas within the City of Los Angeles. Approximately 60,000 feet in length, the existing RSC pipeline begins at the North Hollywood Pumping Station (NHPS) and ends at the Ivanhoe Reservoir. Hollingsworth Spillway is located about midpoint along the pipeline, and is used to control the pressure of the downstream pipeline.

The section of existing pipe north of Hollingsworth Spillway is referred to as the Upper Reach, while the section south is referred to as the Lower Reach. About 70 percent of the existing pipeline is located in City of Los Angeles streets and property with the remainder located within easements in the City of Burbank. Various pipe sizes and material types were used to construct the existing RSC pipeline. For the Upper Reach, 98 percent of the

---

pipeline is concrete pipe, with the remainder being steel. For the Lower Reach, 95 percent of the pipeline is concrete pipe with the remainder being steel.

There is a history of pipe leaks, specifically in the Lower Reach. It is suspected that the combination of aged materials and higher operating pressures have contributed to this. Low pressure problems are also present in the existing RSC. There are sections of pipe that are unpressurized or at pressures less than required by the California Department of Health Services Drinking Water Regulations. Minimum pipe pressure helps to prevent cross contamination from other buried utilities, in particular, sanitary sewer. In addition to these issues, loss of storage capacity within LADWP's water distribution system requires increased pipeline capacity to continue to adequately meet current water requirements of the City of Los Angeles.

#### **4.4.1.1 Attainment of Project Objectives**

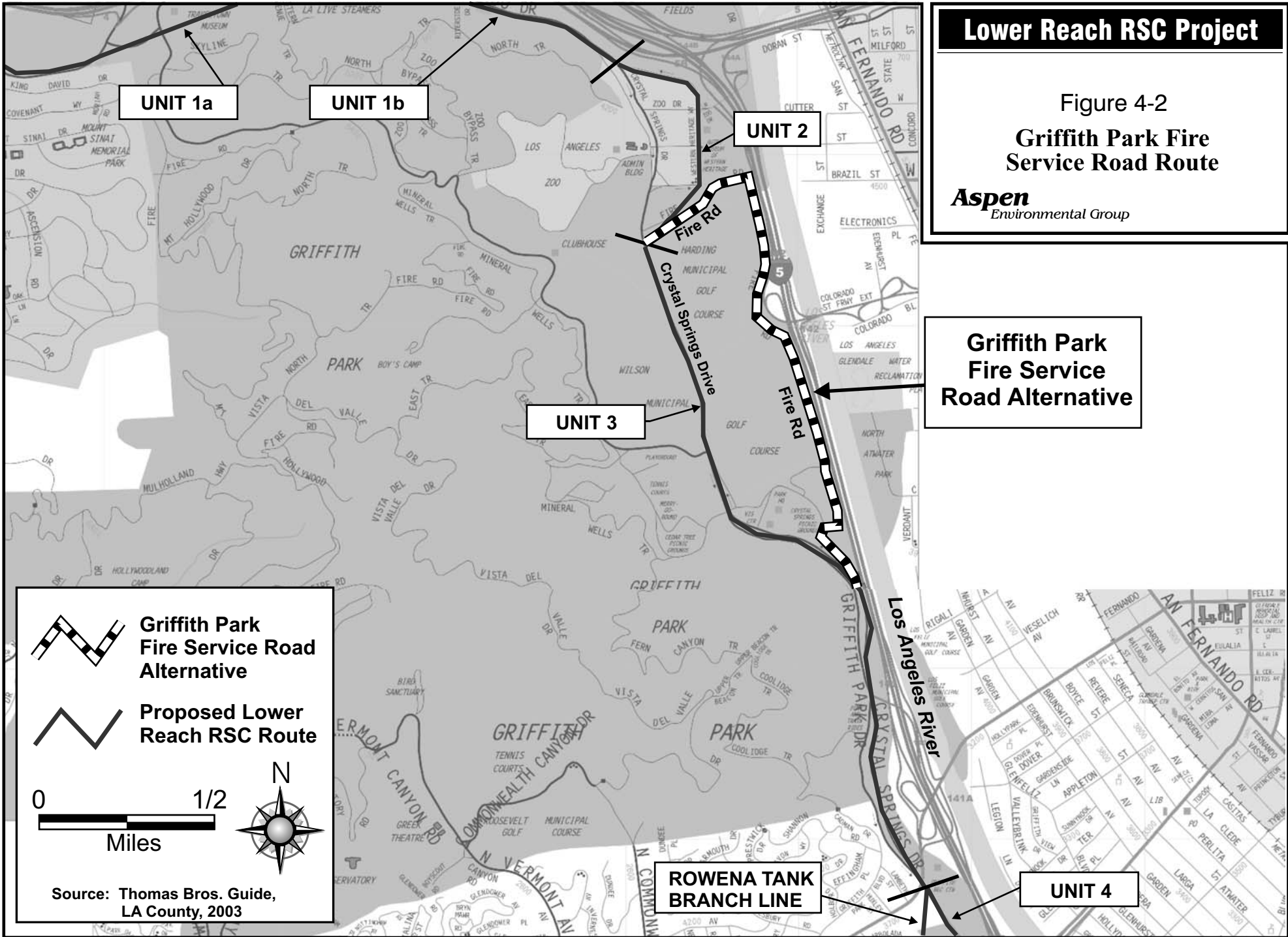
Although this project would provide for an ongoing source of water, it would not meet the basic objectives of the project. The current system cannot provide a reliable supply of water, cannot provide for a larger flow capacity, would not provide a higher water pressure to meet state regulations, and would not compensate for loss of water storage.

#### **4.4.1.2 Impacts**

A "No Project" scenario assumes that the replacement of the existing Lower Reach RSC pipeline would not occur. It should be noted that the No Project scenario would not preclude LADWP from developing other water supply projects in the area, as it must meet the Department of Health and Safety regulations and standards that would not be achieved under the No Project scenario. Implementation of the No Project Alternative would not result in air quality, noise, or traffic impacts, as presented in Section 3, which would occur under the proposed project. However, without improvements generated by the proposed project, additional solutions would be required and demands would increase. The No Project Alternative would not achieve the LADWP's goals and objectives (see Section 4.4.1.1).

#### **4.4.2 Griffith Park Fire Service Road Route Alternative**

The Griffith Park Fire Service Road Route Alternative would result in the development of a portion of the proposed Lower Reach RSC Unit 3 pipeline section within an existing Griffith Park Fire Service Road. The existing Fire Service Road is an approximately 20-foot wide ROW with vehicular access currently limited to Griffith Park fire vehicles only. The Fire Service Road is additionally used as an equestrian trail. As shown in Figure 4-2, the Fire Service Road ROW extends from the intersection of Crystal Springs Drive and Zoo Drive where RSC Units 2 and 3 meet, to Crystal Springs Drive south of the Harding Municipal Golf Course. As would be the case for the proposed Unit 3, it is assumed that a 96-inch diameter pipe would be installed using the open trench method for this alternative. This alternative would require a connection from the proposed Lower Reach RSC pipeline to the Crystal Springs Pump Station, which is located adjacent to Crystal Springs Drive. Installation of the proposed Lower Reach RSC pipeline along the Fire Service Road would mean that at least a 96-inch pipeline would need to be installed through the Harding Municipal Golf Course to the new RSC pipeline in the Fire Service Road. This pipe would be needed to connect the existing portion of the Lower Reach RSC pipeline that runs through the Los Angeles Zoo parking lot with the new Lower Reach RSC pipeline.



---

The purpose of this alternative would be to reduce noise impacts associated with the proposed Lower Reach RSC pipeline construction to recreational uses (particularly Harding Municipal Golf Course) and traffic impacts to the Los Angeles Zoo entrance while meeting the principal objectives of the project.

#### **4.4.2.1 Attainment of Project Objectives**

This alternative reroutes a portion of the pipeline route onto a service road to reduce traffic impacts. The essential components of the proposed project are maintained, thus this alternative would achieve all of the project objectives.

#### **4.4.2.2 Impacts**

##### **Transportation/Traffic**

This alternative would reduce potential traffic impacts on Crystal Springs Drive between the southern end of the Los Angeles Zoo and the Ranger Station compared to the proposed project. Furthermore, potential traffic disruptions along Crystal Springs Drive associated with the proposed project would be reduced as trenching activities would be avoided on this active roadway. While this alternative would result in decreased traffic impacts along Crystal Springs Drive compared to the proposed project, the entire ROW of the fire service road would most likely need to be used for construction. This would preclude emergency/fire access on the fire service road during construction. For the proposed project, a Traffic Construction Management Plan (Mitigation Measure T-1) would be prepared with review and approval by the Los Angeles Department of Transportation; and coordination with emergency service providers would be required to establish provisions to accommodate emergency vehicles, such as plating over excavations, short detours, and alternate routes (Mitigation Measure T-4). These measures (T-1 and T-4) could be applied to this alternative but the level of traffic impact significance would remain comparable to the project (significant and unavoidable).

##### **Air Quality**

Construction air quality impacts would be identical with this alternative as compared to the proposed project. The length of the route associated with this alternative would be approximately the same as the proposed project and would require identical construction activities, thus resulting in similar air quality impacts compared to the proposed project. Because construction activities would be the same, the number of construction related haul trips and worker commute trips would be the same as compared to the proposed project. Therefore, development of the Griffith Park Fire Service Road Alternative would result in similar air quality impacts and would require implementation of the same mitigation measures (AQ-1 and AQ-2) as the proposed project.

##### **Noise**

Construction noise impacts would decrease at the Los Angeles Zoo entrance and at Harding Municipal Golf Course along Crystal Springs Drive with this alternative. While the length of the route associated with this alternative would be approximately the same as the proposed project and would require identical construction activities, construction noise would be concentrated eastward along the I-5 Freeway and away from recreational uses along Crystal Springs Drive (Note: Construction noise would not impact the bridal trail as recreational use of the trail would be eliminated for the duration of construction.). While noise from construction activities and vehicle trips would be diverted away from a section of Crystal Springs Drive, noise impacts would still exist along the eastern stretch of Harding Municipal Golf Course. However, due to the proximity of the I-5 Freeway to

---

the proposed Griffith Park Fire Service Road route, construction noise would be absorbed into freeway traffic noise and result in decreased perception and less impact.

Vibration levels from trenching and jacking activities would still occur along the Griffith Park Fire Service Road route, but would avoid potential impacts to the Los Angeles Zoo entrance as well as the Harding Municipal Golf Course and recreation uses along Crystal Springs Drive. Vibration associated with construction would be perceptible to golfers or workers within the eastern section of Harding Municipal Golf Course. The construction of the Fire Service Road Alternative would relocate peak vibration levels from along Crystal Springs Drive eastward along the Fire Service Road. Implementation of Mitigation Measures N-1 through N-6 would reduce potential impacts to less-than-significant levels.

### **Other**

LADWP indicates that there is an existing 30-inch reclaimed water pipeline within the Fire Service Road. Based on drawings of the reclaimed water pipeline, there may not be enough room for a 96-inch pipeline along the same road. The proposed fire service road route also operates as a bridal trail within the Griffith Park/ Harding Municipal Golf Course facility. During construction, the use of the trail would be eliminated for the duration of construction along this alignment. Restricted access to the bridal trail would be objectionable to park patrons (recreational impact).

This alternative would require a connection from the proposed RSC pipeline to the Crystal Springs Pump Station, which is located adjacent to Crystal Springs Drive. This connection would be installed through the Harding Municipal Golf Course and would result in short-term construction-related impacts, which would be objectionable as it could result in significant, but temporary, operational impacts to the Golf Course. Other considerations include maintenance access and ability to detect pipeline leaks if the pipe were to be placed in the golf course.

### **4.4.3 Alternatives Summary**

Table 4-1 provides a summary of the key issues associated with the alternatives discussed in this section. As noted on the table, these alternatives present additional challenges in the pipeline routing.

**Table 4-1. Summary of Alternatives**

Issue	No Project Alternative	Griffith Park Fire Service Road Route
Land Use Disturbances	No impacts other than maintenance of the pipeline.	This alternative would limit disruptions to the Los Angeles Zoo and Harding Municipal Golf Course along Crystal Springs Drive. However, a connection from the Fire Service Road to the Crystal Springs Pump Station would need to be installed through the golf course.
Engineering and Design	Existing River Supply Conduit would not maintain proper pressure levels.	There is an existing 30-inch reclaimed water pipeline traveling within the Fire Service Road. Based on drawings of the reclaimed water pipeline, there may not be enough room for a 96-inch pipeline along the same road.
Construction and Operation Access	Minimal access impacts only for maintenance of the pipeline.	Emergency/fire access would be blocked on the fire service road during construction.
Other	No impacts.	During construction, the use of the bridal trail within the Griffith Park/Harding Municipal Golf Course would be eliminated for the duration of construction along this alignment, which would be objectionable to park patrons (recreational impacts). Other considerations include maintenance access and ability to detect pipeline leaks if the pipe were to be placed in the golf course.

#### 4.5 Conclusions and Summary

An EIR is required to identify the environmentally superior alternative from among the range of reasonable alternatives that are evaluated. This would ideally be the alternative that results in fewer (or no) significant and unavoidable impacts. CEQA Guidelines §15126.6(e)(2) states that if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative from among the other alternatives. Table 4-2 provides a comparison of the impacts associated with the proposed project and its alternatives.

The No Project Alternative would be expected to reduce all proposed project impacts, but would not achieve any of LADWP's goals and objectives. Without the proposed project improvements, the LADWP would need to implement additional solutions to address the concerns with the current distribution system and to meet the Department of Health and Safety regulations and standards not achieved under this alternative.

**Table 4-2. Comparison of Alternatives to the Proposed Project**

Proposed Lower Reach RSC Project	No Project Alternative	Griffith Park Fire Service Road Route
<b>Transportation/Traffic</b>		
Significant impacts to Zoo Drive, Western Heritage Way, and Crystal Springs Drive, as well as access to recreational facilities within Griffith Park (i.e. Los Angeles Zoo, Museum of the American West and Harding Municipal Golf Course).	<b>Less Traffic Impacts.</b> This alternative would have less impacts than the project because no substantial new traffic would be generated.	<b>Less Traffic Flow Impacts.</b> This alternative would reduce potential traffic impacts on Crystal Springs Drive between the southern end of the Los Angeles Zoo and the Ranger Station and potential traffic disruptions along Crystal Springs Drive as trenching activities would be avoided on this active roadway. <b>Greater Emergency/Fire Access Impacts.</b> The entire ROW of the fire service road would most likely need to be used for construction. This would preclude emergency/fire access on the fire service road during construction. This impact would be considered significant and unavoidable.
<b>Air Quality</b>		
Significant short-term construction impacts to local air quality conditions.	<b>Less Air Quality Impacts.</b> This alternative would not have air quality impacts, except emissions associated with periodic pipeline maintenance.	<b>Comparable Air Quality Impacts.</b> Construction air quality impacts would be identical with this alternative as compared to the proposed project. The length of the route associated with this alternative would be the same as the proposed project and would require identical construction activities, thus resulting in similar air quality impacts compared to the proposed project. Impacts would remain significant and unavoidable.
<b>Noise</b>		
Less than significant impacts with mitigation incorporated.	<b>Less Noise Impacts.</b> This alternative would not have noise impacts except those associated with pipeline maintenance.	<b>Less Noise Impacts.</b> Preliminary analysis indicates that construction noise impacts would decrease at the Los Angeles Zoo entrance and at Harding Municipal Golf Course along Crystal Springs Drive with this alternative. Vibration levels from trenching and jacking activities would still occur along the Griffith Park Fire Service Road route, but would avoid potential impacts to the Los Angeles Zoo entrance as well as the Harding Municipal Golf Course and recreational uses along Crystal Springs Drive.

Because the No Project alternative would not meet LADWP goals and objectives, the environmentally superior alternative would be the Griffith Park Fire Service Road Route Alternative. While this alternative would reduce noise and traffic flow impacts compared to the proposed project, and air quality impacts would be comparable to the proposed project, emergency/fire access impacts would be greater. This alternative would require additional design considerations to accommodate the project pipeline and the existing 30-inch reclaimed water pipeline within the fire service road. Ultimately, the proposed project would be environmentally preferred as it would meet all the project objectives, have only slightly greater noise impacts on the Los Angeles Zoo entrance and Harding Municipal Golf Course, and have less impacts on emergency/fire access. Furthermore, no major design issues have been identified for the proposed project that could potentially make the project infeasible.



**INTENTIONALLY LEFT BLANK**

## 5. Other CEQA Considerations

---

This section presents the evaluation of environmental impacts required by CEQA that are not addressed within other chapters of this EIR, or were not addressed in the IS prepared in August 2004 (see Appendix A.2). This section includes responses to those comments received during the IS public review period that apply specifically to the proposed Lower Reach RSC pipeline, growth-inducing impacts, irreversible environmental changes and use of nonrenewable resources, effects not found to be significant, and significant unavoidable environmental impacts.

### 5.1 Response to Public Scoping Comments

During the public review period for the IS, comment letters and emails were received from the following agencies: California Department of Transportation (District 7); South Coast Air Quality Management District; California Department of Fish and Game (CDFG); the Metropolitan Transportation Authority; City of Los Angeles, Department of Transportation; City of Los Angeles, Department of Recreation and Parks (LADRP); City of Los Angeles Department of Public Works; City of Burbank, Park, Recreation & Community Services Department; Burbank Water and Power; and City of Burbank, Public Works Department. These letters and emails are provided in Appendix A.3 for reference.

Several of the comments received from State and local agencies during the public review period for the IS addressed environmental issue areas which were determined to have less-than-significant impacts and are therefore not discussed in Section 3 of this Draft EIR. Specifically for the Lower Reach, comments were received for the issue areas of Biological Resources and Cultural Resources. Additional comments were made to request clarification on the project description. Therefore, comments not addressed within the other sections of this Draft EIR are summarized below, along with responses, as appropriate.

#### **Project Description**

A comment was received regarding the proposed pipeline route and its potential to impact the Travel Town Museum and related facilities within Griffith Park (see Appendix A.3, City of Los Angeles Department of Recreation and Parks, October 1, 2004). While detailed maps of the right-of-way were not provided as part of the IS, the preliminary design of the Lower Reach RSC alignment shows that the pipeline would be installed using the traditional tunneling method south of the Travel Town Museum through the north end of the parking lot and then proceeding east of the Museum through sage scrub and chaparral vegetation on the northern slopes and foothills of Mount Lee. Therefore, the proposed project would not tunnel under the Museum, new Trainshed, or the new display railroad tracks.

#### **Biological Resources**

The IS evaluated Biological Resources and proposed mitigation measures to reduce impacts to a less-than-significant level (see Appendix A.2, Section 3.4). However, a listing of biological information was requested to be included in the Draft EIR, where applicable, by the CDFG. To address this potential inconsistency, a follow-up email with Mr. Scott Harris of CDFG confirmed that “as long as the impacts were reduced to less than significant, it [the IS analysis] would be fine with CDFG” (CDFG, 2004). Therefore, the Biological Resources analysis did not require updating.

---

It was also noted that Mitigation Measures BIO-7 and BIO-9 only give consideration to the project's impact on "mature" trees. As discussed in Section 3.4 of the IS (see Appendix A.2), the proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. Impacts would be reduced to less than significant with implementation of Mitigation Measures BIO-2, BIO-7 and BIO-9, which are intended to avoid or reduce impacts to mature native and nonnative trees. Mitigation Measure BIO-8 is also provided to reduce construction impacts to trees (in general), including heritage trees, special value trees, and common park trees, by implementing the applicable measures from the Los Angeles Department of Public Works Street Tree Policy and the LADRP Tree Preservation Policy.

Finally, the City of Los Angeles Department of Recreation and Parks noted that a rare plant has been identified in Griffith Park on both sides of Mount Hollywood called *Arctostaphylos glandulosa mollis* (see Appendix A.3, David Attaway email on October 13, 2004). The presence of this plant species within the construction site will be considered as required by Mitigation Measures BIO-1 and BIO-4.

### **Cultural Resources**

In addition to those Los Angeles Historical/Cultural Monuments discussed in the IS (see Appendix A.2, Section 3.5(a)), the historic Rancho Los Feliz Adobe (No. 401) is also in the vicinity of the proposed Lower Reach (see Appendix A.3, City of Los Angeles Department of Recreation and Parks, October 1, 2004). It is located along Crystal Springs Dr. and is currently used as the Park Ranger Headquarters (LAOKAY, 2005). Additional historic resources include the Griffith Park Merry-Go-Round and pump house facilities within Griffith Park (Crystal Springs Picnic Area and Train Ride) (see Appendix A.3, City of Los Angeles Department of Recreation and Parks, October 1, 2004). While these sites are located near to the proposed project alignment within Griffith Park, the Lower Reach RSC pipeline would be placed within Zoo Drive (except in the area of the Travel Town Museum), Western Heritage Way, and Crystal Springs Drive, and would therefore not result in adverse impacts to these historic resources.

## **5.2 Growth-Inducing Impacts**

Pursuant to §15126.2(d) of the CEQA Guidelines, an EIR must address whether the proposed project would directly or indirectly foster growth. This section analyzes whether the proposed project would directly or indirectly induce economic, population, or housing growth in the surrounding area.

The growth-inducing potential of a project would be significant if it fosters growth or a concentration of population above what is assumed in local and regional land use plans, which estimate future population growth. Significant growth impacts also could occur if the project would provide infrastructure or service capacity to accommodate growth levels beyond those permitted by local or regional plans and policies.

The Lower Reach RSC Project would not, directly induce economic, population, or housing growth in the surrounding area. The proposed project would replace and realign the existing Lower Reach RSC pipeline, which has provided over 50 years of continuous service to the City of Los Angeles, but whose reliability and capacity are near its design life limits. Replacement of the existing Lower Reach RSC pipeline would provide for a more reliable water supply to the central area of the City of Los Angeles, provide a larger flow capacity to adequately meet the current water requirements of the City of Los Angeles, ensure that the water distribution system has sufficient system pressure to meet the California Department of Health Services Drinking Water Regulations, and compensate for the loss of water storage within the LADWP water distribution system. The

---

proposed project would not induce growth as it is intended to improve the existing water system. The Lower Reach RSC pipeline is part of the water infrastructure within the City of Los Angeles. As a means to continue serving the area, the proposed project would respond to the current water requirements of the City of Los Angeles, thereby accommodating the current use in the area. The potential exists that the improved infrastructure could indirectly encourage development; however, the LADWP itself is not a part of any future housing development and the proposed project is not intended for any specific development projects.

During construction, it is assumed that the construction workforce would come from within Los Angeles County. The City of Los Angeles contains a considerable construction workforce (81,032 persons in construction trades per Section 3.12, Appendix A.2). As such, construction personnel would not likely move to the project area and would not generate a permanent increase to population levels or result in a decrease in available housing. Therefore, no construction impacts to existing or future population growth levels would occur as a result of project construction. Operation of the proposed project would not require additional permanent employees and, therefore, would not entail any employment increase that might lead to demand for new housing or an increase in population growth. As mentioned above, the potential exists that the improved infrastructure could encourage development; however, the intention of the proposed project is to respond to current water requirements and is not a part of any future housing development, nor is it intended for any specific development projects. Therefore, project construction and operation would not, directly or indirectly, induce economic, population, or housing growth in the surrounding area or the region.

### **5.3 Irreversible Environmental Changes and Use of Nonrenewable Resources**

CEQA Guidelines §15126.2(c) requires an evaluation of the significant irreversible environmental changes that would be caused by a project if implemented, as described:

*Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse there after unlikely. Primary impacts, and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irrecoverable commitments of resources should be evaluated to assure that such current consumption is justified.*

In general, the CEQA Guidelines refer to the need to evaluate and justify the consumption of nonrenewable resources and the extent to which the project commits future generations to similar uses of nonrenewable resources. In addition, CEQA requires that irreversible damage resulting from an environmental accident associated with the project be evaluated.

Determining whether the proposed project may result in significant irreversible effects requires a determination of whether key resources would be degraded or destroyed, such that there is a small possibility of restoring them. The actual construction of the Lower Reach RSC pipeline would not result in the consumption of nonrenewable resources to the extent to which the project commits future generations to similar uses of nonrenewable resources. No such degradation or destruction of resources would result with the proposed project.

---

The use of the Lower Reach RSC pipeline itself would, however, allow future generations to continue consuming water and in greater quantities than the existing Lower Reach RSC pipeline. Nevertheless, it should be acknowledged that the City of Los Angeles continues to lead the way in implementing demand-reduction programs such as the installation of water meters in the early 1900's, which resulted in a 30 percent reduction in water use at that time; implementation of mandatory water rationing during the 1976-1977 drought; adoption of a plumbing retrofit ordinance in 1988 (Los Angeles Municipal Ordinance No. 172075 Effective 7/24/98) to mandate the installation of conservation devices in all properties and require water-efficient landscaping in new construction; and the amendment of that ordinance in 1999 to require the installation of ultra-low-flush toilets in single-family residences prior to resale. The LADWP has invested over \$100 million in conservation measures over the last decade (LADWP, 2004e). Not only does the LADWP emphasize the importance of water conservation, but the new Lower Reach RSC pipeline would also reduce water losses which occur in the existing system, due to pipe leaks. As such, the proposed project would ensure sufficient water for future generations without causing significant irreversible effects on a key resource.

While various natural resources, such as construction materials and petroleum-based fuel, would be used in construction, their use in this project would not result in substantial resource depletion. Once operational, maintenance would include periodic inspection on the isolation, air, and vacuum valves, and testing of the isolation valves. Therefore, the proposed project would not result in substantial resource depletion.

The construction and operation of the proposed project would not present any serious risk of an environmental accident likely to result in irreversible damage. During construction, the proposed project would use small volumes of petroleum hydrocarbons and their derivatives (e.g., gasoline, oils, lubricants, and solvents) to operate construction equipment. Storage of substantial quantities of these materials along the construction alignment would not occur. Construction vehicles on site may require routine or emergency maintenance that could result in the release of oil, diesel fuel, transmission fluid or other materials. However, existing regulations and BMPs for the handling of these substances and procedures for spill containment, as well as implementation of Mitigation Measures HAZ-1 through HAZ-5 (see Appendix A.2, Section 3.7) would reduce the potential for irreversible environmental damage to a less-than-significant level.

As discussed above, operation of the Lower Reach RSC pipeline would require maintenance activities such as periodic inspection on the isolation, air, and vacuum valves, and testing of the isolation valves. Such activities would not present any serious risk of an environmental accident likely to result in irreversible damage. On the other hand, other external hazards (e.g. explosion) could damage the Lower Reach RSC pipeline with the potential to then cause the spread of environmental contamination. To limit the effects of an environmental accident upon the Lower Reach RSC pipeline, the LADWP has emergency response procedures in place to provide for a quick response and limit the area of impact (see Section 2.7.3). For example, as part of the pipeline design, valves would be placed approximately every 5,000 feet along the pipeline (LADWP, 2004f), which would allow any potential pipe leak to be isolated, evaluated, and corrected. Additionally, the higher pressures within the new Lower Reach RSC pipeline would prevent cross-contamination of drinking water with other buried utilities, in particular, sanitary sewer. As such, the risk of a serious environmental accident associated with damage to the Lower Reach RSC pipeline from an external source would be limited, and would therefore not result in irreversible damage.

---

## 5.4 Effects Not Found to be Significant

In accordance with CEQA Guidelines §15128, “An EIR shall contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR. Such a statement may be contained in an attached copy of an Initial Study.” For the proposed project, the following environmental issue areas were determined by the Lead Agency (LADWP) to not have the potential to be significant: Aesthetics, Agricultural Resources, Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Population and Housing, Public Services, Recreation, and Utilities and Service Systems. The LADWP determined that impacts related to these environmental issue areas would not need to be evaluated in the EIR because either: (1) there was substantial evidence demonstrating that impacts would not be significant; or (2) standard mitigation approaches were available to address potentially significant impacts and it was clear that the mitigation would reduce the impacts to less-than-significant levels. Impact discussions related to each of these issue areas are provided in the IS (see Appendix A.2).

### **New Project Feature**

After completion of the IS, it was determined that the water levels of Ivanhoe and Silver Lake Reservoirs, which are owned and operated by LADWP (i.e. no public access), would need to be lowered approximately 16 feet for six to eight weeks to make the connections to the Ivanhoe inlet line and Fletcher Pump Station suction line (LADWP, 2005b). Once the connections are completed, it would take approximately two months to refill the reservoirs to normal levels (LADWP, 2005b). The potential environmental impacts associated with this additional project component were not analyzed in the IS, and are therefore discussed herein. No impacts to Agricultural Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Land Use and Planning, Mineral Resources, Population and Housing, Public Services, Recreation, or Utilities and Service Systems would occur as a result of lowering the reservoirs. However, impacts to Aesthetics, Air Quality, Biological Resources, and Hydrology and Water Quality may result from this action.

### **Aesthetics**

The proposed project would temporarily degrade the existing visual quality of the area through temporarily lowering the water levels in Ivanhoe and Silver Lake Reservoirs. These reservoirs are integral to the views of the surrounding Silver Lake community. However, the reduced reservoir levels would be temporary in nature, lasting only about two months (6-8 weeks plus one month to return levels). This would result in less than significant impacts to visual resources. Aesthetic impacts related to algae growth would be less than significant as the reservoir levels would be lowered during winter months, which would reduce the likelihood of algae blooms as a result of colder temperatures and less sunlight. Additionally, shore chlorination would be increased, as necessary, or copper sulfate would be utilized (LADWP, 2005c) to further reduce the possibility of algae growth. No mitigation is required.

### **Air Quality (Objectionable Odors)**

Reducing the water levels in Ivanhoe and Silver Lake Reservoirs would not result in air pollutant emissions, as no construction or additional operational activities are required. Water levels would be reduced through delivery of water to customers through existing operations. However, the potential exists for accumulated silt and debris to become concentrated when the overall quantity of water is reduced thereby causing objectionable

---

odors to be emitted. Since both Ivanhoe and Silver Lake Reservoirs are concrete-lined, they are not expected to have substantial amounts of silt or debris. Additionally, potential odors caused by algae growth would be less than significant since the reservoir levels would be lowered during winter months, which would reduce the likelihood of algae blooms as a result of colder temperatures and less sunlight. Additionally, shore chlorination would be increased, as necessary, or copper sulfate would be utilized to further reduce the possibility of algae growth (LADWP, 2005c). Therefore, odor impacts associated with reduced water levels in Ivanhoe and Silver Lake Reservoirs would be less than significant. No mitigation is required.

### **Biological Resources**

Ivanhoe and Silver Lake Reservoirs are concrete-lined reservoirs currently used by LADWP for storing treated potable water. As such, no aquatic species are expected to be living within these reservoirs. The reservoirs, however, do support various waterfowl such as ducks and geese, as seen during a site visit conducted on February 1, 2005. While the total water volume of the reservoirs would be reduced as part of the proposed project, the surface area would not be substantially reduced. As such, use of the reservoirs by waterfowl would not be hindered by the reduced water levels within the reservoirs. Therefore, impacts to biological resources would be less than significant. No mitigation is required.

### **Hydrology and Water Quality**

As noted above, the lowering or drawdown of water levels within Ivanhoe and Silver Lake Reservoirs would occur through deliveries to LADWP customers. Both these reservoirs are currently used to service customers and existing LADWP procedures for maintaining water quality would be employed during this temporary drawdown. Therefore, the quality of water delivered to LADWP customers would not be affected. To control algae growth and associated water quality impacts, the reservoir levels would be lowered during cooler months, which would reduce the likelihood of algae blooms as a result of colder temperatures and less sunlight. Additionally, shore chlorination would be increased, as necessary, or copper sulfate would be utilized to prevent algae growth (LADWP, 2005c). Consequently, impacts to hydrology and water quality as a result of lowering the water levels within Ivanhoe and Silver Lake Reservoirs would be less than significant. No mitigation is required.

### **Summary**

Temporarily reducing the water levels of Ivanhoe and Silver Lake Reservoirs would result in either no impacts or less than significant impacts for all environmental issue areas.

### **Initial Study**

It should be noted that the analysis contained in the IS includes impacts and mitigation measures for both the proposed Upper and Lower Reaches of the RSC pipeline. However, as a result of comments received during the Initial Study review period and complications associated with the design and alignment of the proposed Upper Reach of the RSC pipeline, the scope of the proposed project was reduced to include only the Lower Reach. As such, several mitigation measures require updating to remove references to the Upper Reach and the City of Burbank (The Lower Reach would be located completely within the City of Los Angeles). The updates to the mitigation measures presented in the Initial Study (see Appendix A.2) are provided below with additions shown in bold and underlined, and deletions shown in strikethrough text. A complete listing of all mitigation measures for the proposed project is provided in Appendix B of this EIR.

---

## Biological Resources

**BIO-5** Pre-construction bird surveys shall be conducted in all vegetated areas of Units 7, 1a, 1b, 2, 3 and 4 from ~~Buena Vista Park~~ the Headworks Spreading Grounds site through Griffith Park. The surveys shall identify the presence of breeding or nesting pairs or active nests of special status bird species within the project and construction footprint and an additional distance of 500 feet. In the event that surveys indicate habitat occupied by special status bird species within 500 feet of the construction or project footprint, appropriate construction protocol will be developed and implemented.

**BIO-6** LADWP shall manage their construction site, and related facilities, in a manner to avoid or minimize impacts to the local biological resources by implementing the following within Units 7, 1a, 1b, 2, 3 and 4 in the segments from ~~Buena Vista Park~~ the Headworks Spreading Grounds site through Griffith Park:

- Temporarily cover pits and trenches or provide wildlife escape ramps or an approved exclusionary fence for construction areas that contain steep walled holes or trenches that are not required to be covered for human safety reasons. The temporary fence shall be hardware cloth or of similar materials that are approved for use by the U.S. Fish and Wildlife Service and the California Department of Fish and Game;
- Make certain all food-related trash will be disposed of in closed containers and removed at least once a week. Feeding of wildlife shall be prohibited;
- Prohibit pets from being brought to the site;
- Report all inadvertent deaths or injuries of wildlife to the biological monitor who will in turn, notify and follow instruction provided by the City of Los Angeles Department of Recreation and Parks (LADRP) ~~or the City of Burbank Department of Parks and Recreation (BDPR)~~;
- Use native coastal sage scrub, chaparral species in the restoration of land temporarily disturbed during pipeline installation (see Mitigation Measures BIO-7 through BIO-9 below);
- Restore temporarily disturbed sites to their pre-existing physical condition; and
- Ephemeral drainages shall be restored to pre-construction topography/contours and compaction immediately following construction and installation activities. Furthermore, the proposed disturbance to such features may not affect (i.e., act as a barrier to) existing surrounding hydrologic conditions.

**BIO-7** LADWP shall complete a report that identifies all mature native and nonnative trees that would be directly or indirectly impacted by project construction. For ease of interpretation “mature” shall be defined consistent with the City of Los Angeles’ tree protection ordinance as 8 inches in diameter and greater than 4.5 feet high and applicable City of Burbank requirements. This includes all trees whose canopy is located entirely or partially within the pipeline alignment or construction footprint. It shall include trees that are located in segments where underground jacking will occur. The report shall indicate the location, species, size and condition of affected trees and a proposed plan for protection, relocation or replacement. The report shall be provided to the LADRP, Division of Forestry, and the Los Angeles Department of Public Works (LADPW), ~~and the BDPR~~.

**BIO-8** LADWP shall coordinate with the LADPW and the LADRP prior to construction to determine the applicable measures that need to be implemented from the LADPW Street Tree Policy and the LADRP Tree Preservation Policy. ~~LADWP shall also coordinate with the BDPR~~. The purpose of this coordination shall be to identify construction protocols that would be implemented to reduce



---

construction damage, and the pruning, removal and replacement of trees, including heritage trees, special value trees and common park trees.

**BIO-9** For any mature native or nonnative tree that must be removed, LADWP shall prefer replacement or relocation of trees within the same park or residential area in coordination with the LADWP or ~~BDPR~~, as applicable, for trees affected on city streets, or LADWP or ~~BDPR~~, as applicable, for trees affected within city parks. Nonnative trees removed within Griffith Park that cannot be successfully relocated shall be replaced with native trees consistent with LADWP recommendations.

### **Cultural Resources**

**CUL-1** LADWP shall conduct archaeological monitoring during all ground disturbing activities within Units ~~7 and~~ 4, specifically ~~those areas near Universal Studios, Warner Bros. Studios, and~~ the area north of the Silver Lake Reservoir. Cultural resource monitoring locations shall be mapped and flagged prior to construction. Monitoring shall be conducted by a qualified archaeological monitor familiar with the cultural resources of southern California.

In the event a potential significant archeological resource is discovered, all work shall temporarily cease within the immediate area of the find until the site can be assessed by a qualified archeologist in consultation with the LADWP. If the material is determined to be significant, the qualified archeologist shall prepare and implement a treatment plan in consultation with the LADWP. Construction activity shall not resume until authorization has been provided by the LADWP and the qualified archeologist.

Implementation of the above mitigation measures, along with those previously presented in the Initial Study (see Appendix A.2), would reduce impacts associated with Biological Resources and Cultural Resources for the Lower Reach RSC Project to less-than-significant levels.

## **5.5 Significant Unavoidable Environmental Impacts**

Construction of the Lower Reach RSC pipeline would produce significant air quality emissions. Daily construction emissions from the proposed project would exceed the emissions thresholds, as defined by the South Coast Air Quality Management District. Application of Mitigation Measures AQ-1 and AQ-2, provided in Section 3.2.4, would reduce the impacts due to construction; however, impacts would still be significant for NO<sub>x</sub> and PM<sub>10</sub>. Therefore, the proposed project would result in significant unavoidable environmental impacts to air quality during construction. Construction of the Lower Reach RSC pipeline would cause significant transportation and traffic impacts. Construction would generally be performed via open trenching, which is the only feasible cost alternative for the majority of the route, and would occur on roadways that are heavily traveled. This work would reduce capacities on the roadways directly affected and divert traffic to adjacent roadways that are also heavily traveled. While jacking and tunneling can be used to reduce traffic impacts at specific locations, use of this method throughout the entire route would be prohibitively costly. While typical traffic impact mitigation measures are not available for impacts caused by construction, the need for manual traffic control, detours, and roadway/approach closures would be defined in a Traffic Construction Management Plan (Mitigation Measure T-1). Additionally, implementation of Mitigation Measures T-2 through T-5 would reduce impacts to public and emergency vehicle access, parking, public transit, and

---

pedestrian safety to less-than-significant levels. However, no mitigation measures can be implemented to make the proposed project's traffic flow impacts less than significant. As such, a Statement of Overriding Considerations that addresses both transportation/traffic and air quality would be required to proceed with the proposed project.

**INTENTIONALLY LEFT BLANK**

## 6. References

---

- CARB (California Air Resources Board). 2004. Air Quality Statistics. Available online at: [www.arb.ca.gov/adam](http://www.arb.ca.gov/adam). Website accessed on July 6.
- \_\_\_\_\_. 2003. EMFAC 2002, Version 2.2.
- Caltrans (California Department of Transportation). 2004. District 7 – Los Angeles and Ventura Counties. Project Information. Available online at: [www.dot.ca.gov](http://www.dot.ca.gov). Website accessed on September 1.
- CDFG (California Department of Fish and Game). 2004. Personal communication between Sarah Easley of the Los Angeles Department of Water and Power and Scott Harris of the California Department of Fish and Game. September 29.
- City of Burbank. 2004a. Planning Division. Current Projects available online at: [www.burbankca.org/redevelopment/mdpwo.html](http://www.burbankca.org/redevelopment/mdpwo.html) and [www.burbankca.org/planning/platteir.htm](http://www.burbankca.org/planning/platteir.htm). Website accessed on September 15.
- \_\_\_\_\_. 2004b. Planning Division. Personal communication between Carolina Morgan of Aspen Environmental Group and Calvin Chang, Principal Plan Check Engineer. September 16.
- City of Glendale. 2004. City of Glendale Redevelopment Agency. Available online at: [www.glendaleca.com](http://www.glendaleca.com). Website accessed on September 16.
- City of Los Angeles. 1998. Los Angeles CEQA Thresholds Guide: Your Resource for Preparing CEQA Analyses in Los Angeles. May.
- CRA (Community Redevelopment Agency). 2004. City of Los Angeles. Available online at: [www.lacity.org/CRA/](http://www.lacity.org/CRA/). Website accessed on September 1.
- FTA (Federal Transit Administration). 1995. Transit Noise and Vibration Impact Assessment, Final Report, April.
- LADBS (City of Los Angeles, Department of Building and Safety). 2004. Available online at: [www.ci.la.ca.us/ladbs](http://www.ci.la.ca.us/ladbs). Website accessed on September 15.
- LADOT (Los Angeles Department of Transportation). 2004. Personal communication between Carolina Morgan of Aspen Environmental Group and Ed Chow of LADOT. September 1.
- LADPW (City of Los Angeles, Department of Public Works). Bureau of Sanitation. 2004. Notice of Preparation/ Initial Study for the Integrated Resources Plan (IRP). Available online at: [www.lacity.org/san/irp/index.htm](http://www.lacity.org/san/irp/index.htm). Website accessed on October 26.
- LADWP (Los Angeles Department of Water and Power). 2005a. RSC Master Schedule 030105. March 1.
- \_\_\_\_\_. 2005b. Email from Sarah Easley of the Los Angeles Department of Water and Power to Sandra Alarcon-Lopez of Aspen Environmental Group. “FW: RSC LR Ivanhoe Conn”. January 27.
- \_\_\_\_\_. 2005c. Email from Sarah Easley of the Los Angeles Department of Water and Power to Sandra Alarcon-Lopez of Aspen Environmental Group. “FW: RSC WQ at SL/Ivanhoe”. March 1.
- \_\_\_\_\_. 2005d. Email from Sarah Easley of the Los Angeles Department of Water and Power to Sandra Alarcon-Lopez of Aspen Environmental Group. “FW: RSC CEQA-WQ & Slurry”. February 28.

- 
- LADWP (Los Angeles Department of Water and Power). 2004a. River Supply Conduit Improvement Project Response to Corporate Environmental Services. April 6. Faxed May 4.
- \_\_\_\_\_. 2004b. RSC Information Request #4 - Responses. July 6.
- \_\_\_\_\_. 2004c. Email from Sarah Easley of the Los Angeles Department of Water and Power to Sandra Alarcon-Lopez of Aspen Environmental Group. "FW: RSC LR Sch/Route" (worst case scenario for air quality). December 15.
- \_\_\_\_\_. 2004d. Email from Sarah Easley of the Los Angeles Department of Water and Power to Sandra Alarcon-Lopez of Aspen Environmental Group. "FW: Headworks Regulator Station Noise". December 6.
- \_\_\_\_\_. 2004e. Water Past & Present: Conservation Efforts. Available online at: [www.ladwp.com/ladwp/cms/ladwp001627.jsp](http://www.ladwp.com/ladwp/cms/ladwp001627.jsp). Website accessed on September 23.
- \_\_\_\_\_. 2004f. Final Scope of Work Document for the RSC Lower Reach. September 10 (received 9/17/04).
- LAOKAY. 2005. Things to Do in Los Angeles. Available online at: [www.laokay.com/Adobe.htm](http://www.laokay.com/Adobe.htm). Website accessed on January 10.
- MRI (Midwest Research Institute). 1996. *Improvement of Specific Emission Factors (BACM Project No. 1), Final Report*. March.
- OPR (Office of Planning and Research). 1998. State of California General Plan Guidelines, Office of Planning and Research, November.
- SCAQMD (South Coast Air Quality Management District). 2001. Personal communication between Matt Fagundes of Aspen Environmental Group and Steve Smith of the SCAQMD. May 23.
- \_\_\_\_\_. 1993. CEQA Air Quality Handbook.
- Thomas Brothers Guide. 2003. Los Angeles County Street Guide.
- USEPA (U.S. Environmental Protection Agency). 2004. USEPA Region, Air Quality Maps. Available online at: [www.epa.gov/region09/air/maps/maps\\_top.html](http://www.epa.gov/region09/air/maps/maps_top.html). Website accessed on July 8.
- \_\_\_\_\_. 2002. Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling — Compression-Ignition. November.
- \_\_\_\_\_. 1998. AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I. Section 11.9 Western Surface Coal Mining. October.
- \_\_\_\_\_. 1995. AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I. Section 13.2.4 Aggregate Handling and Storage Piles. January.
- \_\_\_\_\_. 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. Section 4, Identified Levels of Environmental Noise In Defined Areas. March.
- Western Regional Climate Center. 2004. Period of Record Monthly Climate Summary for Burbank Valley Pump Plant. Available online at: [www.wrcc@dri.edu](http://www.wrcc@dri.edu). Website accessed on July 6.

## 7. Glossary of Terms and Acronyms

---

### 7.1 Glossary of Terms

**A-weighted decibel scale (dBA).** A frequency weighting scale that best reflects the human ear's reduced sensitivity to low frequencies and correlates well with human perceptions of the annoying aspects of noise.

**Air quality standard.** The specified average concentration of an air pollutant in ambient air during a specified time period, at or above which level the public health may be at risk; equivalent to Ambient Air Quality Standard (AAQS).

**Air entrainment.** Air in the form of bubbles dispersed in water.

**Ambient air.** Any unconfined portion of the atmosphere; the outside air.

**Ambient Air Quality Standards (AAQS).** Standards and emission limits for individual sources and categories of sources of air pollutants.

**Appurtenant.** Relating to something that is added but is not essential. Examples: access hole, flow meter, etc.

**Attainment area.** An area, such as the City of Los Angeles, that has air quality as good as or better than the national or state ambient air quality standards as defined in the federal Clean Air Act and the California Clean Air Act, respectively. An area may be an attainment area for one pollutant and a non-attainment area for others. The proposed project would be in an attainment area for the state and federal NO<sub>2</sub> and SO<sub>2</sub> standards.

**Average.** As a measure, the sum of the measurements (over a specified period) divided by the total number of measurements.

**Backfill.** Earth or soil that is replaced after a construction dig (excavation).

**Baseline.** A set of existing conditions against which change is to be described and measured.

**Best management practices (BMPs).** Those methods that have been determined to be the most effective, practical means of preventing or reducing environmental effects and are routine measures that are consistently applied or used by the Los Angeles Department of Water and Power.

**California Ambient Air Quality Standards (CAAQS).** Legal limits on outdoor air pollution designed to protect the health and welfare of Californians.

**California Environmental Quality Act (CEQA).** A California Statute that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate significant impacts to the extent feasible.

**Carbon monoxide (CO).** A colorless, odorless, very toxic gas that burns to carbon dioxide with a blue flame and is formed as a product of the incomplete combustion of carbon.

**Clean Air Act (CAA).** A series of detailed controlled federal and state requirements designed to guide states in controlling sources of air pollution.

**Community Noise Equivalent Level (CNEL).** A weighted average of sound levels gathered throughout a 24-hour period. This is essentially a measure of ambient noise. Different weighting factors apply to day, evening, and nighttime periods. This recognizes that community members are most sensitive to noise in late night hours and are more sensitive during evening hours than in daytime hours.

**Construction staging area.** The temporary location where construction equipment and materials are stored. Possible staging areas identified for the proposed project include various City-owned lots within Griffith Park, or at local LADWP facilities, including the Silver Lake Reservoir Complex.

---

**Contaminant.** Any physical, chemical, biological, or radiological substance or matter that has an adverse effect on air, water, or soil.

**Day-night average sound level ( $L_{dn}$ ).** This is equivalent to the 24-hour equivalent sound level (in dBA) with a 10 dBA penalty applied to nighttime sounds occurring between 10:00 p.m. and 7:00 a.m.

**Discharge.** Flow of dewatering water, hydrostatic test water, fugitive dust control water, and surface water from the construction site(s). Can also apply to the flow of chemical emissions into the air through designated venting mechanisms.

**Emission.** Unwanted substances released by human activity into air or water.

**Environmental Impact Report (EIR).** A document required of state and local agencies by the California Environmental Quality Act for public or private projects that have the potential to significantly affect the physical environment.

**Environmentally Superior Alternative.** Alternative selected by the CEQA lead agency (LADWP) that provides an overall environmental advantage over the other alternatives.

**Equivalent sound level ( $L_{eq}$ ).** A single value for any desired duration (usually one hour), which includes all of the time-varying sound energy in the measurement period.

**Fine particulate matter ( $PM_{2.5}$ ).** Particulate matter less than or equal to 2.5 microns in size.

**Fugitive dust.** Airborne pulverized soil particles.

**Hazardous Air Pollutant (HAP).** An air pollutant listed by the EPA in §112(b) of the Federal Clean Air Act, or determined by the Department of Environmental Quality to cause adverse effects to human health or the environment.

**Head Losses.** The head, pressure or energy (they are the same) lost by water flowing in a pipe as a result of turbulence caused by the velocity (speed) of the flowing water and the roughness of the pipe, or restrictions caused by fittings (valves, etc.).

**Hydraulic losses.** General term for water flow and pressure losses specifically within a pipeline system.

**Lower Reach RSC Pipeline.** Proposed water pipeline from the west end of the Headworks Spreading Grounds site to the Ivanhoe inlet line located at the intersection of West Silver Lake Drive and Armstrong Avenue.

**Microgram ( $\mu\text{g}$ ).** One millionth of a gram.

**Miles per hour (mph).** The ratio of the distance traveled (in miles) to the time spent traveling (in hours).

**Milligrams (mg).** One thousandth of a gram.

**National Ambient Air Quality Standards (NAAQS).** Standards established by USEPA that apply to outdoor air throughout the country.

**National Pollutant Discharge Elimination System (NPDES).** A provision of the Clean Water Act which prohibits discharge of pollutants into waters of the United States, which includes all surface waters, rivers, lakes, estuaries, coastal waters, and wetlands, including all navigable waters. (e.g., Los Angeles River), unless a special permit is issued by the USEPA, a state, or, where delegated, a tribal government on an Indian reservation. A NPDES hydrostatic test permit would be required to discharge used hydrostatic test water into nearby storm drains, or discharged to sewer drains within the City of Los Angeles.

**Nitrogen dioxide ( $\text{NO}_2$ ).** A toxic, reddish-brown gas and strong oxidizing agent that is an atmospheric pollutant. It is usually produced by combustion of fossil fuels.

---

**Nonattainment area.** Area that does not meet one or more of the National or California Ambient Air Quality Standards for the criteria pollutants designated in the federal Clean Air Act. The proposed project would be in a nonattainment area for the state and federal 1-hour ozone standard, federal 8-hour ozone standard, federal and state PM<sub>10</sub>, PM<sub>2.5</sub>, and CO standards.

**Non-point sources.** Diffuse pollution sources (i.e., without a single point of origin or not introduced into a receiving stream from a specific outlet). The pollutants are generally carried off the land by storm water. Common non-point sources are agriculture, forestry, urban, mining, construction, dams, channels, land disposal, saltwater intrusion, and city streets.

**Organic.** Referring to or derived from living organisms. In chemistry, any compound containing carbon.

**Oxides of nitrogen (NO<sub>x</sub>).** Chemical compounds of nitrogen produced as a byproduct of combustion. These compounds combine with hydrocarbons to produce smog.

**Ozone (O<sub>3</sub>).** A molecule of three oxygen atoms. A principal component of "oxidant" in photochemically polluted atmospheres.

**Particulate matter (particulates).** Very fine sized solid matter or droplets, typically averaging one micron or smaller in diameter. Also called "aerosol."

**Parts per million (ppm).** Concentration measure in milligrams or micrograms of a pollutant per cubic meter of air (mg/m<sup>3</sup> or µg/m<sup>3</sup>).

**Photochemical activity.** Reaction that absorbs energy from the sun and reacts chemically to form ozone (O<sub>3</sub>).

**Pipe/piping.** A long tube generally made of metal or concrete that is used to carry water.

**Point source.** A stationary location or fixed facility from which pollutants are discharged; any single identifiable source of pollution; e.g., a pipe, ditch, ship, ore pit, factory smokestack.

**Prevention of Significant Deterioration (PSD).** Rules imposed by the USEPA seeking to create regulatory certainty over what activities fall under the "routine maintenance, repair and replacement" (RMRR) exclusion to the New Source Review (NSR) provision of the Clean Air Act.

**Respirable/inhalable particulate matter (PM<sub>10</sub>).** Particulate matter less than or equal to 10 microns in size.

**Rowena Tank.** An existing reinforced 10 million gallon tank hidden beneath the upper-tiered portion of a nearly four-acre pond, which includes waterfalls, gardens and artificial rockwork. It is located at the corner of Rowena Avenue and Hyperion Avenue in the City of Los Angeles. The proposed project would construct a pipeline section that would connect to the Rowena Tank. The pipeline section is called the Rowena Tank Branch Line.

**Sensitive receptor.** A segment of a population that is more susceptible to the effects of air pollution, noise, and other environmental concerns, due to age or weak health. Sensitive receptors include residences, schools, hospitals, etc.

**Shoring.** A term used in construction meaning the act of bracing to provide temporary support. Typically trench walls are supported with hydraulic jacks or trench boxes. Steel or wood sheeting between H-beams (e.g., beam and plate) may also be used to support jacking and receiving pits. Shoring would be used in the construction of the pipeline in all open trenches, and jacking and receiving pits to allow for safe access.

**Slurry.** A mixture of a liquid (water) and fine particles of a solid substance such as clay or cement. Slurry will be used during pipeline installation as backfill material.

**State Implementation Plans (SIPs).** Air quality plans developed to meet federal requirements.



---

**Sulfur dioxide (SO<sub>2</sub>).** A heavy pungent toxic gas that is used especially in making sulfuric acid, in bleaching, as a preservative, and as a refrigerant. It easily condensed to a colorless liquid, and is a major air pollutant, especially in industrial areas.

**Tons per year (tpy).** Measure of the annual quantity of a pollutant.

**Upper Reach RSC Pipeline.** Proposed water pipeline from the North Hollywood Pumping Station to the west end of the Headworks Spreading Grounds site. The proposed Upper Reach RSC pipeline was included in the Initial Study, but removed from the scope of this Draft EIR due to complications associated with the proposed design and alignment.

**Volatile organic compounds (VOCs).** A group of organic compounds characterized by their tendency to evaporate easily at room temperature.

---

## 7.2 Acronyms

**AAQS**

Ambient Air Quality Standards

**BDPR**

City of Burbank Department of Parks and Recreation

**BMPs**

Best Management Practices

**CAA**

Clean Air Act (federal)

**CAAQS**

California Ambient Air Quality Standards

**Caltrans**

California Department of Transportation

**CARB**

California Air Resources Board

**CCAA**

California Clean Air Act

**CDFG**

California Department of Fish and Game

**CEQA**

California Environmental Quality Act

**CMP**

Congestion Management Program

**CNEL**

Community Noise Equivalent Level

**CO**

Carbon monoxide

**dBA**

A-weighted decibel

**EIR**

Environmental Impact Report

**ft**

Foot

**HDPE**

High-density polyethylene

**IS**

Initial Study

**LADOT**

Los Angeles Department of Transportation

**LADPW**

City of Los Angeles Department of Public Works

**LADRP**

City of Los Angeles Department of Recreation and Parks

**LADWP**

Los Angeles Department of Water and Power

**LAUSDAC**

Los Angeles Water System Data Acquisition and Control

**L<sub>dn</sub>**

Day-night average sound level.

**L<sub>eq</sub>**

Equivalent sound level

**L<sub>max</sub>**

Maximum sound level

**L<sub>min</sub>**

Minimum sound level

**MTA**

Metropolitan Transportation Authority

**NAAQS**

National Ambient Air Quality Standards

**NHPS**

North Hollywood Pumping Station

**NOP**

Notice of Preparation

**NO<sub>x</sub> / NO<sub>2</sub>**

Oxides of Nitrogen / Nitrogen dioxide

**NPDES**

National Pollution Discharge Elimination System

**NSR**

New Source Review

**OSHA**

Occupational Safety and Health Administration

**O<sub>3</sub>**

Ozone

---

**PM<sub>10</sub> / PM<sub>2.5</sub>**

Fine particulate matter

**PSD**

Prevention of Significant Deterioration

**RMRR**

routine maintenance, repair and replacement

**ROCs**

Reactive Organic Compounds

**ROGs**

Reactive Organic Gases

**ROW**

Right-of-way

**RSC**

River Supply Conduit

**RWQCB**

Regional Water Quality Control Board

**SCAB**

South Coast Air Basin

**SCAQMD**

South Coast Air Quality Management District

**SIP**

State Implementation Plan

**SLRCSR Project**

Silver Lake Reservoir Complex Storage  
Replacement Project

**SO<sub>x</sub> / SO<sub>2</sub>**

Oxides of Sulfur / Sulfur dioxide

**TIA**

Transportation Impact Assessment

**USEPA**

United States Environmental Protection Agency

**VOC**

Volatile organic compound

**WATCH**

City of Los Angeles Work Area Traffic Control  
Handbook

## 8. Report Preparation Team

---

In accordance with CEQA Guidelines §15063(d)(6), Table 8-1 lists the persons that prepared, or participated in the preparation of, this Draft EIR.

**Table 8-1. List of Preparers and Reviewers**

Name	Organization	Project Function/Role
<b>Los Angeles Department of Water and Power</b>		
Lucinda C. Misaka, PE	LADWP	Project Manager
Charles Holloway	LADWP	Supervisor of Environmental Assessment
Sarah Easley	LADWP	Environmental Program Manager
<b>Aspen Environmental Group Team</b>		
Sandra Alarcón-Lopez, MA	Aspen	Task Order Manager/Project Manager
Lisa Blewitt	Aspen	Deputy Project Manager, Executive Summary, Introduction, Project Description, Other CEQA Considerations, Glossary of Terms and Acronyms
Scott Debauche, MS	Aspen	Alternatives Analysis, Transportation/Traffic
Matt Fagundes	Aspen	Air Quality, Noise
William Walters, PE	Aspen	Air Quality Technical Reviewer
Judy Spicer	Aspen	Document Production Coordinator
Kati Simpson	Aspen	Graphics
Joel Falter	Katz, Okitsu & Associates	Traffic Study (Appendix B)
Brian Marchetti	Katz, Okitsu & Associates	Traffic Study (Appendix B)

**INTENTIONALLY LEFT BLANK**

---

## **APPENDICES**

---

### **A. SCOPING MATERIALS**

#### **A.1 NOTICE OF PREPARATION**

#### **A.2 INITIAL STUDY – RIVER SUPPLY CONDUIT PROJECT**

#### **A.3 COMMENT LETTERS**

### **B. MITIGATION MEASURES**

### **C. TRAFFIC STUDY**

### **D. AIR POLLUTANT EMISSION CALCULATIONS**

**INTENTIONALLY LEFT BLANK**

---

**APPENDIX A**  
**SCOPING MATERIALS**

---

**A.1 NOTICE OF PREPARATION**

**A.2 INITIAL STUDY – RIVER SUPPLY CONDUIT PROJECT**

**A.3 COMMENT LETTERS**



**INTENTIONALLY LEFT BLANK**

---

**APPENDIX A.1**  
**NOTICE OF PREPARATION**

---

**INTENTIONALLY LEFT BLANK**



JAMES K. HAHN  
Mayor

Commission  
DOMINICK W. RUBALCAVA, *President*  
SID C. STOLPER, *Vice President*  
ANNIE E. CHO  
GERARD McCALLUM II  
SILVIA SAUCEDO  
SUSAN C. PARKS, *Secretary*

DAVID H. WIGGS, *General Manager*  
FRANK SALAS, *Chief Administrative Officer*

## Notice of Preparation

August 24, 2004

**TO:** Agencies, Organizations, and Interested Parties

**SUBJECT:** Notice of Preparation of an Environmental Impact Report  
River Supply Conduit Project  
Los Angeles Department of Water and Power, City of Los Angeles

The City of Los Angeles Department of Water and Power (LADWP), acting as the lead agency under the California Environmental Quality Act (CEQA), has determined that an Environmental Impact Report (EIR) will be prepared for the proposed River Supply Conduit Project. The project description, location, and the probable environmental effects of the proposed project are summarized below and are presented in more detail in the Initial Study. The Initial Study may be accessed via the internet at the following website: <http://www.ladwp.com/ladwp/cms/ladwp004156.jsp>. It is also available for public review at the following Los Angeles and Burbank Public Library locations:

Valley Plaza Branch  
12311 Vanowen Street  
North Hollywood, CA 91605  
(818) 765-0805

North Hollywood Regional  
5211 Tujunga Avenue  
North Hollywood, CA 91601  
(818) 766-7185

Atwater Village  
3379 Glendale Boulevard  
Los Angeles, CA 90039  
(323) 664-1353

Buena Vista Branch Library  
300 North Buena Vista Street  
Burbank, CA 91505  
(818) 238-5620

**Agencies:** The 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 prepared by the Los Angeles Department of Water and Power when considering your permit or other discretionary approval your agency may issue for the River Supply Conduit Project.

**Organizations and Interested Parties:** Comments and concerns regarding environmental issues of concern associated with the project are also requested from organizations and individuals.

Due to the time mandated by State Law, responses must be received *no later than 30 days after receipt* of this notice. Please indicate a contact person in your response and submit your response to the following:

Sarah Easley, Environmental Program Manager  
Los Angeles Department of Water and Power, Environmental Services  
111 North Hope Street, Room 1044  
Los Angeles, CA 90012.

If you require additional information, please contact Sarah Easley at (213) 367-1276.

## 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

**Project Title:** River Supply Conduit Project

**Project Location:** The proposed River Supply Conduit (RSC) pipeline would be located in public street rights-of-way, LADWP property, and LADWP utility easement in the North Hollywood, Silver Lake, and Los Feliz communities (including Griffith Park) within the City of Los Angeles and within the City of Burbank. The area through which the pipeline is proposed to be constructed is bounded by Sherman Way to the north, U.S., Highway 170/101 (Hollywood Freeway) to the west and southwest, Interstate 5 (Golden State Freeway) to the east, and State Route 2 (Glendale Freeway) to the southwest. The RSC pipeline would be located in the LADWP East Valley, Central and Western Districts service areas.

**Project Description:** The LADWP is proposing to construct a new larger RSC pipeline to replace the Upper and Lower Reaches of the existing RSC pipeline in a new alignment. The existing RSC pipeline has provided over 50 years of continuous service to the City of Los Angeles, and its reliability and capacity are near its design life limits. In addition, the LADWP proposes to construct a new RSC Inlet Structure to improve and maintain adequate system pressure for the new proposed RSC pipeline. Within the current RSC pipeline system, flow and pressure losses (hydraulic losses) occur as a result of trapped air bubbles (air entrainment) and excessive pressure losses caused by friction (head losses) produced by the current RSC Inlet Structure and as a result of pipeline friction losses due to the smaller pipe sizes within the pipeline system.

Additional factors contributing to the need for improvements to LADWP's water distribution system include: (1) increased consumer consumption, (2) new California Department of Health Services Drinking Water Regulations, (3) reduced open reservoir storage due to more stringent state and federal water quality regulations, and (4) susceptibility to earthquake and other natural disasters. Therefore, LADWP has identified the following objectives for the proposed project:

- Provide a more reliable supply of water to the central area of the City of Los Angeles.
- Provide a larger flow capacity to adequately meet the current water requirements of the City of Los Angeles.
- Provide higher water pressure to meet California Department of Health Services (DHS) Drinking Water Regulations.
- Compensate for loss of water storage within the LADWP water distribution system.

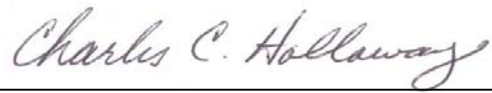
The **proposed RSC pipeline** would involve the construction of approximately 70,000 linear feet (about 13.3 miles) of 48-, 60-, 66-, 72-, 84-, and 96-inch diameter welded steel underground pipeline. Construction of the proposed project pipeline would occur along existing street rights-of-way, LADWP property and existing easements, or open space/recreation areas, and would also include construction of appurtenant structures (e.g., maintenance/access holes, flow meters, valves, and/or vaults).

The **proposed RSC Inlet Structure** would provide 250 cubic feet per second of capacity to the new RSC pipeline. The inlet structure would include a concrete inlet chamber (15 feet long by 15 feet wide by 44 feet deep) with openings on each side to allow water to enter and approximately 90 feet of 72-inch pipe to connect the inlet chamber to the Upper Reach of the new RSC pipeline. The RSC Inlet Structure would be located at the existing North Hollywood Pumping Station (NHPS), which is located in the North Hollywood area of the City of Los Angeles on the northwest corner of Vanowen Street and Morella Avenue.

**Probable Environmental Effects:** The LADWP has prepared an Initial Study of the RSC Project and has determined that three issue areas may be potentially significant as a result of the proposed project: Air Quality, Noise, and Transportation and Traffic. The remaining environmental issues have been determined to have no impact, less-than-significant impact, or less-than-significant impacts with mitigation incorporated. The Initial Study prepared for the RSC Project includes mitigation measures that when implemented would reduce Aesthetic, Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, and Recreation impacts associated with the proposed project. Agricultural Resources, Land Use, Mineral Resources, Population and Housing, Public Services, and Utilities and Public Systems would have no impact or a less-than-significant impact as a result of the RSC Project. Therefore, the LADWP will prepare an

EIR that evaluates in more detail the Air Quality, Noise, and Transportation and Traffic impacts associated with the project.

The EIR will also include analysis of a reasonable range of alternatives, including a "No Project" alternative.

A handwritten signature in cursive script that reads "Charles C. Holloway". The signature is written in black ink and is positioned above a horizontal line.

**Signature**

Charles C. Holloway  
Supervisor of Environmental Assessment  
Date: August 24, 2004

**INTENTIONALLY LEFT BLANK**

---

**APPENDIX A.2**  
**INITIAL STUDY – RIVER SUPPLY CONDUIT PROJECT**

---



**INTENTIONALLY LEFT BLANK**

**DEPARTMENT OF WATER AND POWER  
CITY OF LOS ANGELES**

**INITIAL STUDY  
RIVER SUPPLY CONDUIT PROJECT**

**August 2004**

**LADWP Commissioners:**

Dominick W. Rubalcava, President  
Sid Stolper, Vice President  
Annie E. Cho, Commissioner  
Gerard McCallum II, Commissioner  
Silvia Saucedo, Commissioner

**Acting General Manager**

Enrique Martinez

**Chief Operating Officer, Water System**

Gerald Gewe

**Water System Planning & Projects**

Susan Rowghani

**Project Manager**

Anselmo Collins

**Environmental Assessment**

Charles C. Holloway

**Environmental Program Manager**

Sarah Easley

**Prepared by:**

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

**Technical Assistance Provided by:**

Aspen Environmental Group  
30423 Canwood Street, Suite 215  
Agoura Hills, CA 91301



**INTENTIONALLY LEFT BLANK**

---

**Los Angeles Department of Water and Power**  
**RIVER SUPPLY CONDUIT PROJECT**  
**INITIAL STUDY**

---

**Table of Contents**

	<u>Page</u>
<b>1. Project Information</b>	
1-1 Project Title .....	1
1-2 Lead Agency Name and Address .....	1
1-3 Contact Person and Phone Number .....	1
1-4 Project Location .....	1
1-5 Council District .....	1
1-6 Project Sponsor's Name and Address .....	1
1-7 General Plan Designation .....	7
1-8 Zoning .....	7
1-9 Surrounding Land Uses and Setting .....	7
1-10 Project Description .....	7
1-11 Other Public Agency Approvals Required .....	21
<b>2. Environmental Determination</b>	
2.1 Environmental Factors Potentially Affected .....	23
2.2 Determination .....	23
<b>3. Evaluation of Environmental Impacts</b>	
3.1 Aesthetics .....	24
3.2 Agricultural Resources .....	25
3.3 Air Quality .....	26
3.4 Biological Resources .....	29
3.5 Cultural Resources .....	36
3.6 Geology and Soils .....	39
3.7 Hazards and Hazardous Materials .....	43
3.8 Hydrology and Water Quality .....	49
3.9 Land Use and Planning .....	54
3.10 Mineral Resources .....	59
3.11 Noise .....	59
3.12 Population and Housing .....	63
3.13 Public Services .....	64
3.14 Recreation .....	67
3.15 Transportation/Traffic .....	67
3.16 Utilities and Service Systems .....	69
3.17 Mandatory Findings of Significance .....	73
<b>4. References</b> .....	<b>75</b>
<b>5. Report Preparation</b> .....	<b>77</b>

**INTENTIONALLY LEFT BLANK**

---

# **1. Project Information**

---

## **1-1. Project Title**

River Supply Conduit Project (proposed project)

## **1-2. Lead Agency Name and Address**

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

## **1-3. Contact Person and Phone Number**

Sarah Easley  
Environmental Program Manager  
Los Angeles Department of Water and Power  
Environmental Services  
111 North Hope Street, Room 1044  
Los Angeles, CA 90012  
Telephone: (213) 367-1276

## **1-4. Project Location**

The proposed River Supply Conduit (RSC) pipeline would be located in public street rights-of-way, Los Angeles Department of Water and Power (LADWP) property, and LADWP utility easements in the North Hollywood, Silver Lake, and Los Feliz communities (including Griffith Park) within the City of Los Angeles and the City of Burbank. Figure 1-1 depicts the regional location of the proposed project. The area through which the pipeline is proposed to be constructed is bounded by Sherman Way to the north, U.S. Highway 170/101 (Hollywood Freeway) to the west and southwest, Interstate 5 (Golden State Freeway) to the east, and State Route 2 (Glendale Freeway) to the southeast (see Section 10 for details). The RSC pipeline would be located in the LADWP East Valley, Central and Western District service areas.

The pipeline route has been divided into two geographic areas (the Upper Reach and the Lower Reach). As illustrated in Figures 1-2 and 1-3, the proposed pipeline route would begin at the North Hollywood Pumping Station (NHPS) and travel southeast thru the Griffith Park area, and connect to the Rowena/Ivanhoe connecting line below Los Feliz Boulevard. Two branch or trunk lines would also connect the RSC pipeline to the Rowena Tank and to the Fletcher Pump Station suction line.

## **1-5. Council District**

The proposed project would be located in Council Districts 2, 4, and 6 of the City of Los Angeles. However, approximately 7,500 linear feet of the proposed pipeline would be located in the City of Burbank beginning at the intersection of Riverside Drive and Clybourn Avenue and extending to Buena Vista Park just southeast of the NBC Studios.

## **1-6. Project Sponsor's Name and Address**

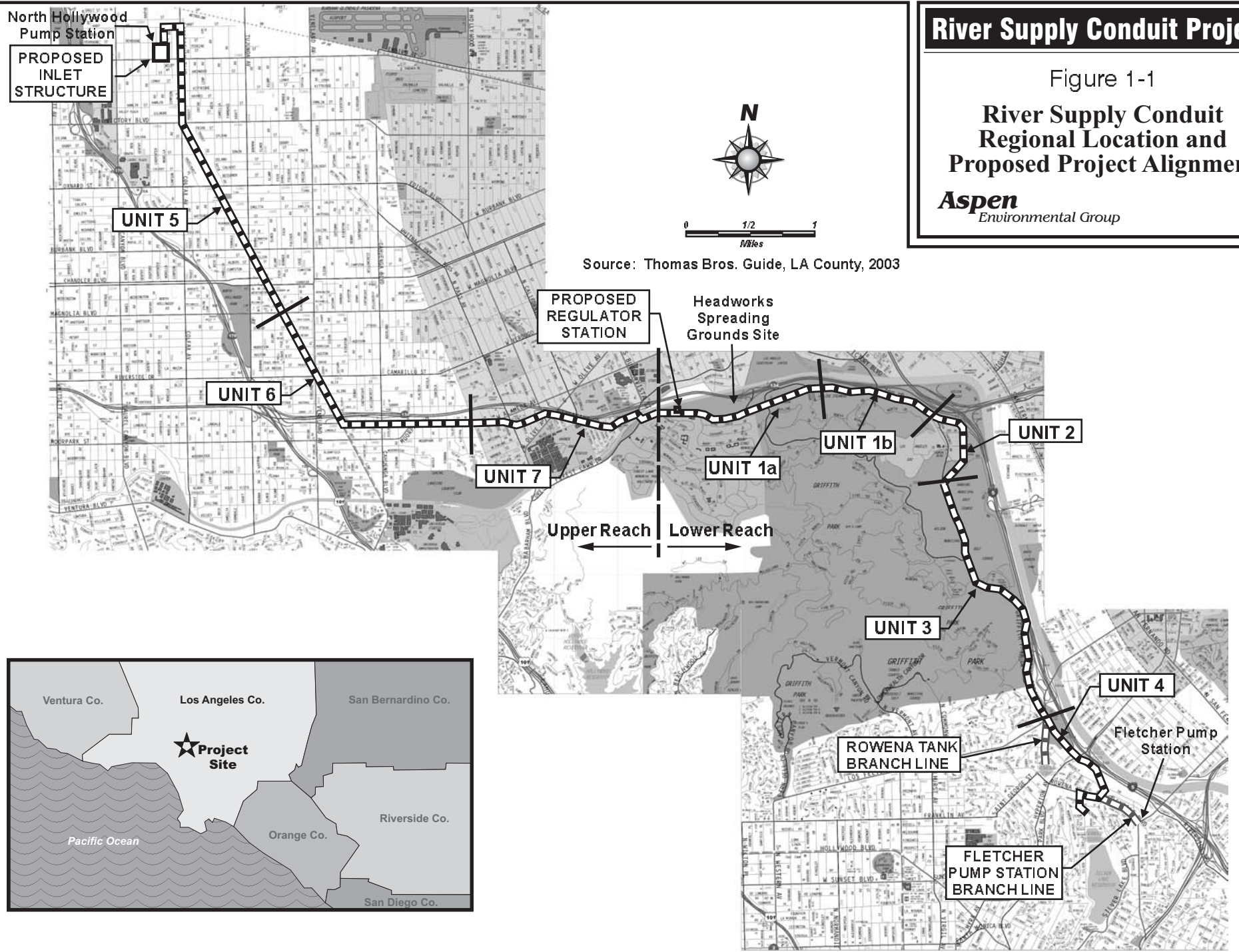
Los Angeles Department of Water and Power  
Water Engineering and Technical Services Business Unit – Project Planning and Development  
111 North Hope Street, Room 1336  
Los Angeles, CA 90012

# River Supply Conduit Project

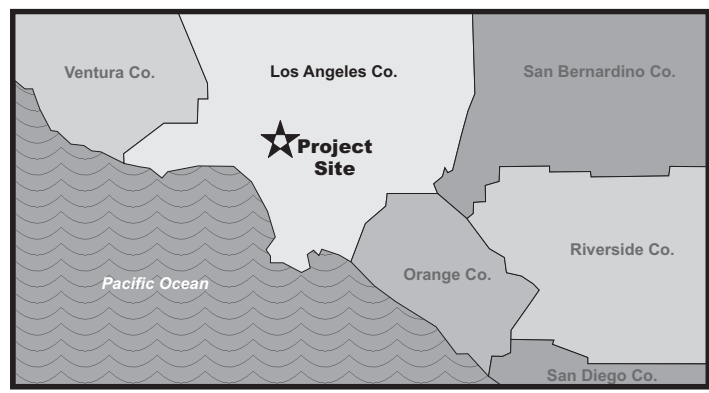
Figure 1-1

## River Supply Conduit Regional Location and Proposed Project Alignment

**Aspen**  
Environmental Group



Source: Thomas Bros. Guide, LA County, 2003

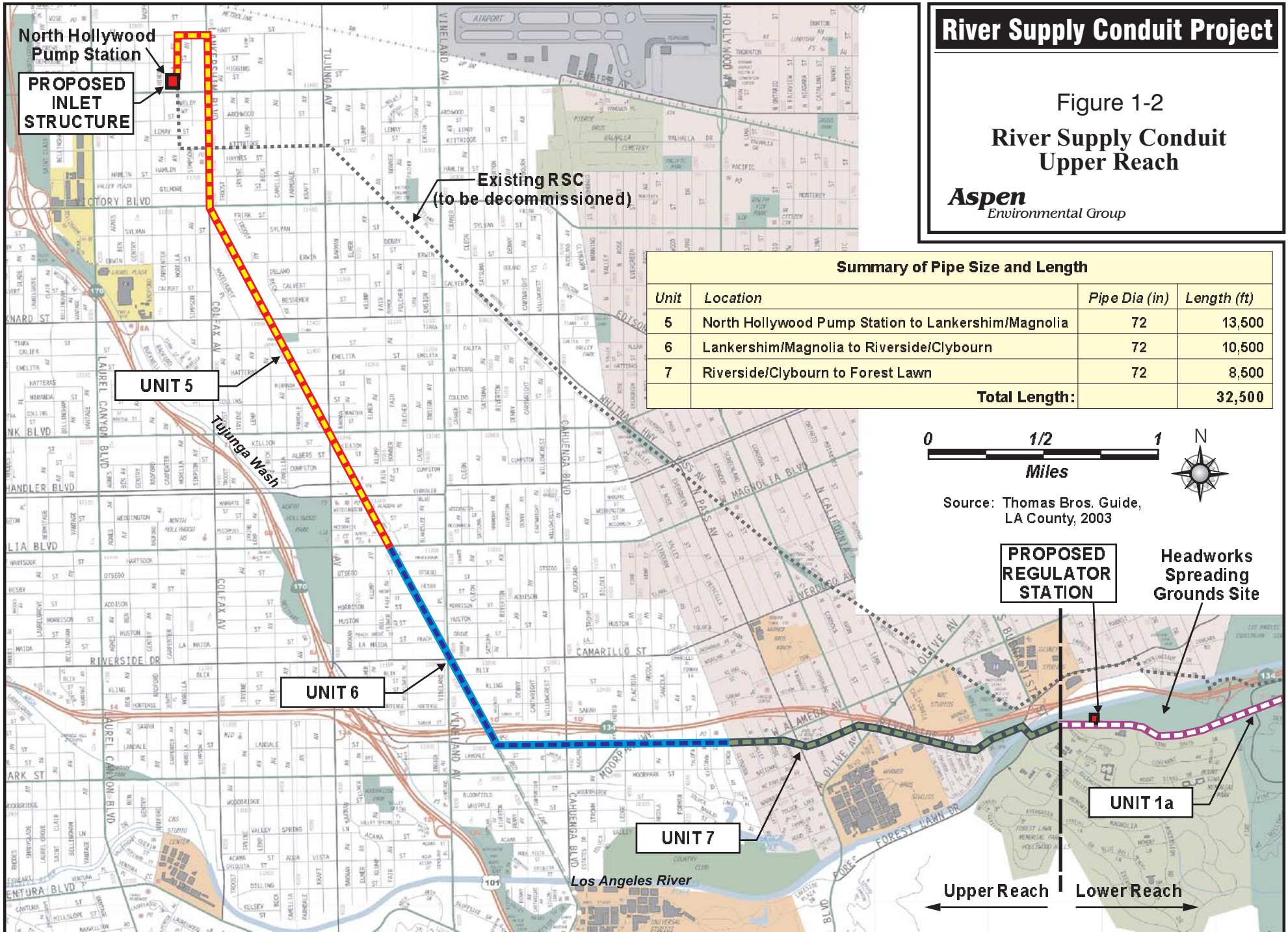




# River Supply Conduit Project

Figure 1-2  
River Supply Conduit  
Upper Reach

**Aspen**  
Environmental Group





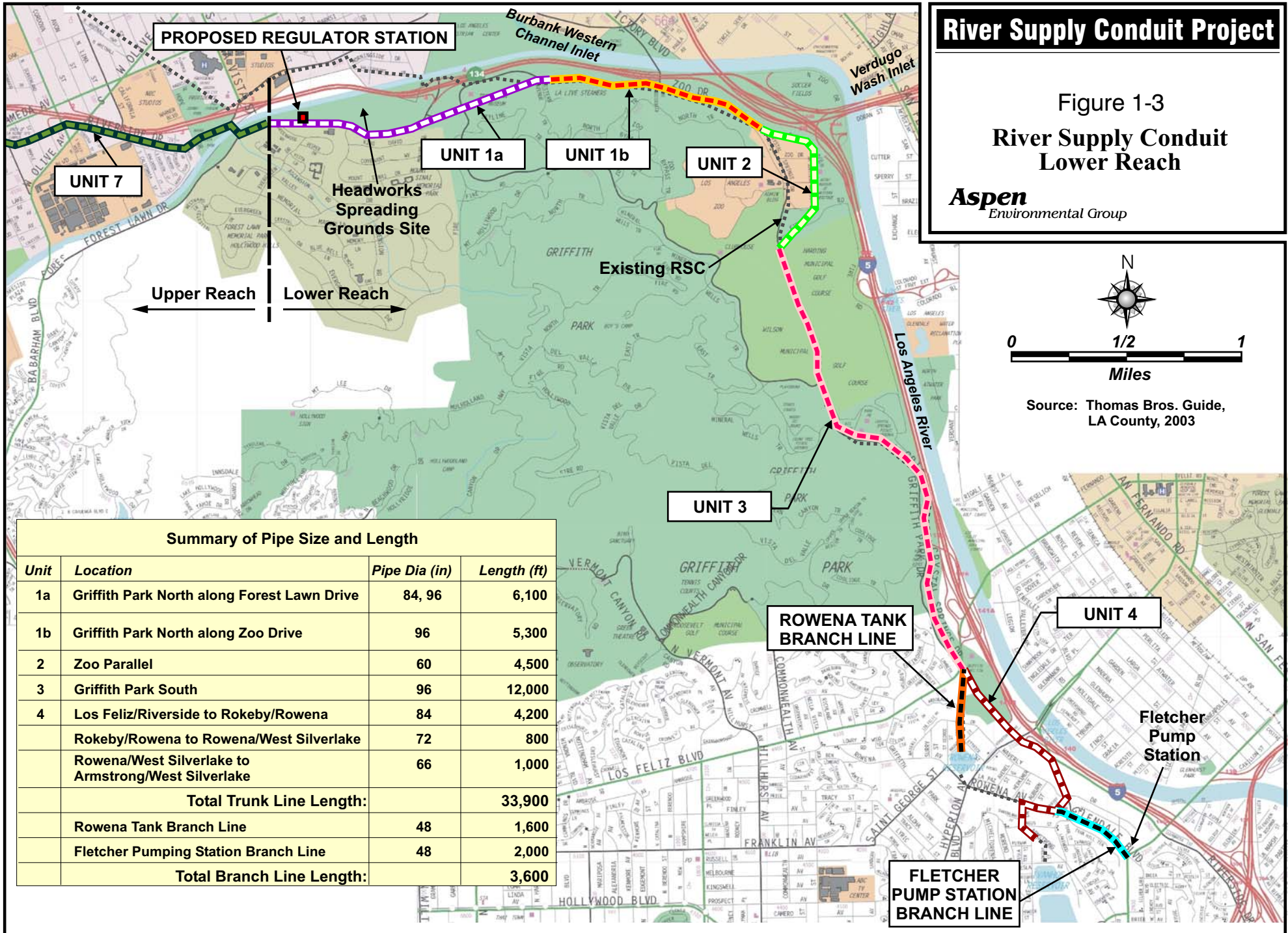
---

**INTENTIONALLY LEFT BLANK**

# River Supply Conduit Project

Figure 1-3  
River Supply Conduit  
Lower Reach

**Aspen**  
Environmental Group



Summary of Pipe Size and Length

Unit	Location	Pipe Dia (in)	Length (ft)
1a	Griffith Park North along Forest Lawn Drive	84, 96	6,100
1b	Griffith Park North along Zoo Drive	96	5,300
2	Zoo Parallel	60	4,500
3	Griffith Park South	96	12,000
4	Los Feliz/Riverside to Rokeby/Rowena	84	4,200
	Rokeby/Rowena to Rowena/West Silverlake	72	800
	Rowena/West Silverlake to Armstrong/West Silverlake	66	1,000
	<b>Total Trunk Line Length:</b>		<b>33,900</b>
	Rowena Tank Branch Line	48	1,600
	Fletcher Pumping Station Branch Line	48	2,000
	<b>Total Branch Line Length:</b>		<b>3,600</b>

---

**INTENTIONALLY LEFT BLANK**

---

### **1-7. General Plan Designation**

The proposed project would include a linear pipeline traversing two jurisdictions, and multiple land use designations and districts under various City of Los Angeles Community Plans and the City of Burbank General Plan, including the Burbank Media District Specific Plan.

### **1-8. Zoning**

As discussed above, the RSC pipeline would traverse two jurisdictions, and multiple zoning designations and districts under the City of Los Angeles Zoning Code (Section 1 of the Los Angeles Municipal Code) and the City of Burbank Zoning Ordinance.

### **1-9. Surrounding Land Uses and Setting**

The majority of the Upper Reach of the proposed pipeline route would pass through urban commercial zones interspersed with residential areas. The southern portion of the Upper Reach would pass through Buena Vista Park, a municipal park in the City of Burbank, and cross the Los Angeles River. The majority of the northern portion of the Lower Reach would be located within existing streets within Griffith Park, a 4,000-acre recreation area in the City of Los Angeles. The southern portion of the Lower Reach would be located within city streets surrounded by urban development including both residential and commercial zones.

### **1-10. Project Description**

The LADWP is proposing a new larger RSC pipeline to replace the Upper and Lower Reaches of the existing RSC pipeline in a new alignment. The proposed project would involve the construction of approximately 70,000 linear feet (about 13.3 miles) of 48-, 60-, 66-, 72-, 84-, and 96-inch diameter welded steel underground pipeline. Construction of the proposed project pipeline would occur within existing street rights-of-way, LADWP property and existing easements, or open space/recreation areas, and would also include construction of appurtenant structures (e.g., maintenance/access holes, flow meters, valves, and/or vaults).

#### **Background**

The RSC is a major transmission pipeline in the LADWP water distribution system. Built in the 1940s, the existing RSC pipeline's purpose is to transport large amounts of water from the Los Angeles Reservoir Complex and local ground water wells to reservoirs and distribution facilities located in the central areas of the City of Los Angeles. Approximately 60,000 feet in length, the existing RSC pipeline begins at the NHPS and ends at the Ivanhoe Reservoir. Hollingsworth Spillway is located about midpoint along the pipeline and is currently used to control the pressure of the downstream pipeline.

The section of existing pipe north of Hollingsworth Spillway is referred to as the Upper Reach, while the section south is referred to as the Lower Reach. About 70 percent of the pipeline is located in City of Los Angeles streets and property with the remainder located within easements in the City of Burbank. Various pipe sizes and material types were used to construct the existing RSC pipeline. For the Upper Reach, 98 percent of the pipeline is reinforced concrete pipe, with the remainder being steel. For the Lower Reach, 95 percent of the pipeline is reinforced concrete pipe with the remainder being steel.

As the RSC has aged, numerous issues regarding the pipeline have emerged. Sections of the RSC pipeline are either unpressurized or are at very low pressures. As such, these pipelines are below the current requirements of the California Department of Health Services Drinking Water Regulations (Title 22, Section 64566(c)), which require "water mains to be designed to have at least 5 psig [pounds per square inch gauge] pressure throughout any buried length of the main

---

except when the main is removed from service for repairs or maintenance.” These minimum pressures help to prevent cross-contamination from other buried utilities, in particular, sanitary sewer. At the same time, some sections of the pipe are subject to pressures greater than those recommended by the manufacturer. Additionally, over the years, the RSC pipeline has experienced cases of pipe leaks. For example, in 2001, leaking pipe joints near the intersection of Los Feliz Boulevard and Riverside Drive were repaired using an internal seal system. Although the leaks were stopped, the seals, which are still in place, were only intended to be a temporary measure.

Further impacting the service of the RSC, and in order to meet new state and federal water quality regulations, the LADWP is proposing to remove the Silver Lake Reservoir Complex, including both Silver Lake and Ivanhoe Reservoirs, which are destinations for the existing RSC, from direct service to the LADWP water distribution system. Water storage currently provided by the Silver Lake Reservoir Complex would be replaced by an underground covered storage reservoir at the former Headworks Spreading Grounds site. An EIR is being prepared for this project, the Silver Lake Reservoir Complex Storage Replacement Project, by the LADWP. Information for this project is available at the following website:

[www.ladwp.com/ladwp/cms/ladwp004720.pdf](http://www.ladwp.com/ladwp/cms/ladwp004720.pdf).

The existing RSC Inlet Structure was constructed in 1994 to serve as a source for the existing RSC pipeline. It is located inside of the NHPS sump, which is located within the North Hollywood area of the City of Los Angeles on the northwest corner of Vanowen Street and Morella Avenue. The design of the existing inlet structure results in flow and pressure losses (hydraulic losses) in the RSC pipeline by producing significant trapped air bubbles (air entrainment), which reduces the capacity of the pipeline, and by producing excessive pressure losses caused by friction (head losses). The existing RSC Inlet Structure has a current capacity of 160 cubic feet per second (cfs).

### **LADWP's Project Objectives**

The existing RSC pipeline, which the proposed project is intended to replace, has provided over 50 years of continuous service to the City, and its reliability and capacity are near its design life limits. Additional factors contributing to the need for improvements to LADWP's water distribution system include: (1) increased consumer consumption, (2) new California Department of Health Services Drinking Water Regulations, (3) reduced open reservoir storage due to more stringent state and federal water quality regulations, and (4) susceptibility to earthquake and other natural disasters. In addition, the LADWP's water distribution system must be capable of handling increased system demands, and hydraulic losses must be minimized. Within the current RSC pipeline system, hydraulic losses occur as a result of air entrainment and excessive head losses produced by the RSC Inlet Structure and as a result of pipeline friction losses due to the smaller pipe sizes within the pipeline system.

To address these issues, LADWP has identified the following objectives for the proposed project:

- Provide a more reliable supply of water to the central area of the City of Los Angeles.
- Provide a larger flow capacity to adequately meet the current water requirements of the City of Los Angeles.
- Provide higher water pressure to meet California Department of Health Services Drinking Water Regulations.
- Compensate for loss of water storage within the LADWP water distribution system.

---

## Proposed Pipeline Route

The proposed pipeline route includes an upper and lower reach. Each of these reaches is summarized below. Due to the considerable length of the proposed RSC pipeline and to facilitate discussion of the proposed project, the Upper and Lower Reaches have been divided into seven units that are further described in Table 1-1.

**Upper Reach RSC Pipeline.** The proposed Upper Reach RSC pipeline would be located along/in City of Los Angeles and City of Burbank streets and parks (See Figure 1-2). The portion of the pipeline in the City of Burbank would be 7,500 feet long, and the remaining 25,000 feet would be in the City of Los Angeles. The majority of the proposed pipeline would go through urban development consisting of commercial zones interspersed with residential zones.

The north end of the Upper Reach would begin at the proposed RSC Inlet Structure north of Vanowen Street at Morella Avenue, in the North Hollywood area of the City of Los Angeles. Once exiting the Inlet Structure, the pipeline would continue north along either Hinds Avenue or Morella Avenue, turning east onto Hart Street, then south onto Lankershim Boulevard, and east again onto Riverside Drive until reaching Buena Vista Park, a municipal park, east of Bob Hope Drive. At this point the pipeline would continue across the Los Angeles River to Forest Lawn Drive, and east to the west end of the Headworks Spreading Grounds site.

**Lower Reach RSC Pipeline.** The proposed Lower Reach RSC pipeline would involve the construction of approximately 37,500 linear feet (about 7.1 miles) of welded steel pipeline located along/in City of Los Angeles streets and property (See Figure 1-3). The north end of the pipeline would begin at the west end of the Headworks Spreading Grounds site. The north half of the pipeline would be located in Griffith Park along Zoo Drive and Crystal Springs Drive. Once exiting Griffith Park at Crystal Springs Drive and Los Feliz Boulevard, the pipeline would continue southerly along Riverside Drive, turning south onto Glendale Boulevard, then southwest on Rokeby Street, then west on Rowena Avenue, and south again onto West Silver Lake Drive until reaching the intersection with Armstrong Avenue. Two branch or trunk lines would also be constructed. The first would begin south of Los Feliz Boulevard at Riverside Drive, and continue south through Mulholland Memorial Park, before entering the existing Rowena Tunnel to connect to the Rowena Tank. The other branch/trunk line would begin at Rowena Avenue and Rokeby Street and continue southeast on Rowena Avenue and tie into the Fletcher Pump Station suction line.

## Project Components

**RSC Pipeline.** Pipeline construction would be composed of several activities. The construction activities would be organized to proceed in the order listed below.

1. Pre-construction activities
2. ROW clearing
3. Pipeline installation
4. Weld inspection
5. Applying protective coating to the weld joints
6. Backfilling, if required
7. Hydrostatic testing and disinfection
8. Restoring and cleaning of affected construction areas

Once the proposed pipeline project is approved and the specific alignment is confirmed, a construction plan would be developed that, among other things, would identify refueling operations. Refueling of construction equipment would take place along the rights-of-way using absorbent material to create temporary berms around the equipment.

Prior to construction, LADWP's contractor would develop an emergency response plan, spill prevention plan, or similar document. As part of this plan, the LADWP's contractor would be required to have available adequate spill containment and cleanup resources on site at all times. The contractor would be prepared to contain, control, clean up, and dispose of any potential fuel spill quickly and completely.

**Table 1-1. Summary of Unit Route(s)**

<b>Unit and Location</b>	<b>City</b>	<b>Route</b>
<b>UPPER REACH</b>		
Unit 5 North Hollywood Pump Station to Lankershim/Magnolia	Los Angeles	Hinds Avenue or Morella Avenue from the proposed NHPS RSC Inlet Structure north to Hart Street Hart Street east to Lankershim Boulevard Lankershim Boulevard south from Hart Street to Magnolia Boulevard
Unit 6 Lankershim/Magnolia to Riverside/Clybourn	Los Angeles	Lankershim Boulevard south from Magnolia Boulevard to Riverside Drive Riverside Drive east from Lankershim Boulevard to Clybourn Avenue
Unit 7 Riverside/Clybourn to Forest Lawn	Los Angeles Burbank	Riverside Drive from Clybourn Avenue to Buena Vista Park east of Bob Hope Drive Across the Los Angeles River from Buena Vista Park to Forest Lawn Drive Forest Lawn Drive east to the west end of the Headworks Spreading Grounds site
<b>LOWER REACH</b>		
Unit 1a Griffith Park North along Forest Lawn Drive	Los Angeles	From the west end of the Headworks Spreading Grounds site along Forest Lawn Drive, to the proposed regulator station, and continuing along Forest Lawn Drive and Zoo Drive to the L.A. Live Steamers (children's train ride).
Unit 1b Griffith Park North along Zoo Drive	Los Angeles	From L.A. Live Steamers along Zoo Drive to a location 1,800 feet north of the northerly end of Western Heritage Way.
Unit 2 Zoo Parallel Line (Western Heritage Way)	Los Angeles	From the southern end of Unit 1b to approximately 800 feet south of the southern end of Western Heritage Way, running in Western Heritage Way, other paved roads, and equestrian trails.
Unit 3 Griffith Park South (Crystal Springs Drive)	Los Angeles	From the southern end of Unit 2 to Los Feliz Boulevard, running in Crystal Springs Drive.
Unit 4 Los Feliz/Riverside to Rokeby/Rowena, Rokeby/Rowena to Rowena/West Silver Lake, and Rowena/West Silver Lake to Armstrong/West Silver Lake	Los Angeles	From the southern end of Unit 3, southeast in Riverside Drive; turning southerly onto Glendale Boulevard; turning southwest onto Rokeby Street, then westerly onto Rowena; and then south in West Silver Lake Drive to the intersection of West Silver Lake Drive and Armstrong Avenue (connecting to the Ivanhoe inlet line).  In addition, two branch lines would be constructed in Unit 4. The Rowena Branch Line would connect the RSC pipeline to the Rowena Tank. The Fletcher PS Branch Line would connect the RSC pipeline to the Fletcher Pump Station suction line.

Construction of the proposed project would occur on public property, including street rights-of-way and municipal parks. Installation of the pipeline would be accomplished by a combination of open-trench excavations, jacking, tunneling (micro-tunneling or traditional tunneling), and slip



---

lining, as described below under Pipeline Construction Methods. In general, deep sections of pipe would be tunneled and street intersections would be jacked or tunneled. For those areas along the pipeline alignment allowing for pipeline depths of 15 feet or less, open-trenching would be used. In sequence, the general process for the construction methods consists of site preparation, excavation, pipe (and/or appurtenant structure) installation and backfilling, and site restoration (where applicable). For tunneling and jacking operations, a pit would be needed at the entrance and exit of each pipe segment to install the pipeline. All these construction methods would require off-site staging area(s) to temporarily store supplies and materials (See "Staging Areas" below).

In the Upper Reach, where 72-inch diameter pipe would be installed, the minimum trench depth would be 12-feet with a maximum of approximately 55-feet at approaches to jacking pits. In the Lower Reach, in jacking areas and certain open trenching areas, it may be required to dive under existing substructures resulting in maximum trench depths of approximately 25 to 30 feet or more. The maximum trench width would be the pipe diameter plus two feet on either side of the pipe for the open trench method and the maximum pit sizes for jacking/tunneling would be about 18 feet wide by 40 feet long. The overall width, including the work area along the side of the trench, would be approximately 30 to 35 feet.

Upper Reach construction techniques would include approximately:

- 2,600 feet of tunneling or jacking with steel or concrete cylinder casing;
- 24,300 feet of open trench excavation; and
- Eleven (11) auger-bores (jacking method) or tunneling with steel casing across street intersections and the Los Angeles River (300-400 foot drives, assuming construction of the RSC pipeline beneath the river, although a pipe bridge is also a possible means of crossing the river).

Lower Reach construction techniques would include approximately:

- 5,700 feet of tunneling or jacking with steel casing or other tunnel liners for eight (8) tunnels;
- 31,700 feet of open trench excavation; and
- 1,000 feet of slip lining for the branch line to the Rowena Tank.

The Rowena Tank branch line would be constructed using open trench methods through the Mulholland Memorial Park south of the William Mulholland Memorial Fountain, before entering the existing Rowena Tunnel. Only those portions of the park directly affected by the pipeline construction would be closed upon approval by the Department of Recreation and Parks. The Rowena Tunnel is a circular tunnel, approximately 72-inches in diameter (inside diameter) located within a LADWP easement. The north portal begins approximately 850 feet south of the intersection of Los Feliz Boulevard and Riverside Drive and extends south for approximately 1,000 feet to the south portal. The new RSC pipeline would be installed (sliplined) inside this existing tunnel. Once the new RSC pipeline is installed through the Rowena Tunnel, a connection would be made to the existing Rowena Tank inlet line located in the north corner of the Rowena property, southerly of the intersection of Maxwell Street and Ettrick Street.

The branch line to the Fletcher Pump Station suction line would be constructed using the open-trench method.

A summary of the proposed pipeline route based on the seven units described above and defined in Figures 1-2 and 1-3, including the pipeline location, length, diameter and general construction



method(s) is provided in Table 1-2. The activity/pipeline construction methods presented in Table 1-2 are further described under “Pipeline Construction Methods” below.

**Proposed Regulator Station.** Pressure regulating stations are used in water supply systems to control pressure in the pipelines. A typical station is located in an underground vault and consists of several parallel pipes, or legs, that branch off the main pipeline. These pipe legs are smaller than the main pipeline and have regulator valves installed, which control pressure by how much the valve is opened or closed. Ancillary equipment is also required for the vault and may include lines valves, power, ventilation, and pumps.

As part of the RSC pipeline construction, a regulator station would be built underground inside a vault within the Headworks Spreading Grounds site. This station would consist of approximately seven smaller pipe legs (three 24-inch, two 16-inch, and two 12-inch legs). Each pipeline would have a control valve, which would be operated as necessary to maintain the pressure requirements downstream within the Lower Reach of the RSC pipeline.

**Proposed Inlet Structure.** The proposed RSC Inlet Structure would provide 250 cfs of capacity to the new RSC pipeline. The RSC Inlet Structure would generally be located inside the existing NHPS sump, except for the portion that would connect the inlet structure to the new Upper Reach of the RSC pipeline, which would be located underground and adjacent to the NHPS. The NHPS is located in the North Hollywood area of the City of Los Angeles on the northwest corner of Vanowen Street and Morella Avenue.

The proposed Inlet Structure would include:

- A concrete inlet chamber approximately 15 feet long by 15 feet wide by 44 feet deep. The structure would have openings on each side to allow water to enter the inlet.
- Approximately 90 feet of 72-inch pipe to connect from the inlet chamber to the new RSC pipeline.

**Table 1-2. Summary of Unit Characteristics and Construction Method**

Unit No.	Unit Details	Length (Feet)	Pipe Dia. (in)	Proposed Construction Method <sup>b</sup>
<b>UPPER REACH</b>				
5	• North Hollywood Pump Station to Lankershim/Magnolia	13,500	72	Open Trench/ Tunneling/ Jacking
6	• Lankershim/Magnolia to Riverside/Clybourn	10,500	72	Open Trench/ Jacking
7	• Riverside/Clybourn to Forest Lawn	8,500	72	Open Trench/ Tunneling/ Jacking
<b>LOWER REACH</b>				
1a <sup>a</sup>	• Griffith Park North along Forest Lawn Drive	6,100	84, 96	Open Trench/Tunneling
1b	Griffith Park North along Zoo Drive	5,300	96	Open Trench
2	Zoo Parallel Line (Western Heritage Way)	4,500	60	Open Trench
3	• Griffith Park South (Crystal Springs Drive)	12,000	96	Open Trench/Jacking/Tunneling
4	Los Feliz/Riverside to Rokeby/Rowena	4,200	84, 96	Open Trench/Jacking
	Rokeby/Rowena to Rowena/West Silver Lake	800	72	Open Trench
	• Rowena/West Silver Lake to Armstrong/West Silver Lake	1,000	66	Open Trench/Jacking
	Trunk Line Rowena Branch Line Los Feliz/Riverside to Rowena Tank	1,600	48	Open Trench/ Tunneling/ Slip Lining
	Trunk Line Fletcher PS Branch Line Rokeby/Rowena to Fletcher	2,000	48	Open Trench

Note(s):

a. Proposed regulator station to be constructed as part of Unit 1a.

b. Construction methods are to be finalized by the construction contractor.

---

Since the proposed RSC Inlet Structure would generally be located inside the existing NHPS sump, which is a covered structure, and the connection to the Upper Reach of the RSC pipeline would be located underground, the new inlet structure would not be visible from outside the NHPS.

Construction of the RSC Inlet Structure would occur mostly in the existing NHPS, a property of LADWP. Approximately 50 feet of 72-inch pipe would be placed in Hinds Avenue or Morella Avenue, a public right of way. Construction of the inlet chamber would require open excavation to depths of approximately 20 feet and, potentially, a cofferdam inside the existing NHPS sump to minimize the disruption of water supply. The installation of the pipeline would be accomplished through a combination of jacking and open trench excavation to depths of approximately 45 feet.

In sequence, the typical pipeline construction process consists of site preparation, excavation and shoring, installation or construction, backfilling, and site restoration. For installation of the pipeline using jacking operations, a pit would be needed at the entrance and exit of each pipe segment. Additionally, the NHPS or off-site staging areas would be required to temporarily store supplies and materials.

**Appurtenant Improvements.** The Upper and Lower Reaches would also include construction of appurtenant structures as follows:

- Vaults and ventilation stacks
- Maintenance and access holes
- Flow meters
- Electrical and mechanical cabinets
- Pipeline valves, air vacuum valves, and air release valves
- Blowoffs

The proposed project would also include the modification of existing NHPS sump to accommodate the proposed RSC Inlet Structure.

**Decommissioning of Existing RSC Pipeline.** The existing RSC pipeline, from the NHPS to the Hollingsworth Spillway Structure, would be decommissioned after completion of the Upper Reach of the proposed RSC pipeline. The Upper Reach of the existing RSC pipeline would be kept in good condition after decommissioning, by covering existing openings. The existing Lower Reach of the RSC pipeline, from the Hollingsworth Spillway Structure to the Silver Lake Reservoir Complex, is in poor condition and would be abandoned pursuant to applicable regulations.

### **Project Specifics**

**Construction Schedule, Planning, and Labor Force.** As shown in Table 1-3, construction of the proposed project would be expected to commence in October 2005 and would be completed by July 2010, for a total of 57 months.

**Table 1-3. Proposed Construction Schedule**

Unit	Start Date	Completion Date	Estimated Duration (Days)
1a <sup>a</sup>	June 2007	August 2008	326
1b	June 2006	March 2007	217
2	April 2007	December 2007	196
3	January 2006	November 2007	500
4	October 2005	August 2007	500
5	February 2008	January 2009	240
6	November 2008	September 2009	217
7	September 2009	July 2010	218
Inlet	October 2006	June 2007	175

Note(s):

a. Proposed regulator station to be constructed as part of Unit 1a.

Approximately 50 percent of the workforce would be skilled labor, and 50 percent would be unskilled labor, as shown in Table 1-4. During the peak construction period, four open trench and two jacking operations are anticipated to occur simultaneously over four pipeline units (e.g. Units 1a, 2, 3, and 4). Therefore, approximately 96 personnel (22 employees times four open trench activities, plus four employees times two jacking operations) would be employed on the project during the peak construction period. On a typical workday, workers would travel directly to one of the predetermined staging areas, where they would gather equipment and proceed in work crews to the construction sites along the alignment. Construction activities would involve several (up to 80 assuming a 1.2 rideshare/other transportation factor) construction worker vehicles traveling daily to and from the proposed pipeline alignment from the nearest LADWP facility. Additional truck trips would be needed to transport unused excavated soil from trenching to an appropriate facility for reuse or ultimate disposal.

**Table 1-4. Personnel, Equipment, and Refueling Requirements**

Activity <sup>a</sup>	Personnel		Equipment		Refueling
	Skilled	Unskilled	Quantity	Type	
Open Trench	11	11	5	Pickups	Off-site
			1	Service truck	Off-site
			1	Backhoe	On-site
			6	Dump trucks	Off-site
			1	Welding trucks	Off-site
			1	Pitman	Off-site
			1	Crane	On-site
			1	Wheel loader	On-site
			1	Compactor	On-site
			1	Fork lift	On-site
			1	Water truck	Off-site
Jacking	2	2	1	Excavator	On-site
			2	Pickups	Off-site
			1	Dump trucks	Off-site
			1	Crane	On-site
			1	Excavator	On-site
Tunneling	2	4	2	Pickups	Off-site
			1	Dump trucks	Off-site
			1	Excavator	On-site
			1	Crane	On-site
Pipe Delivery (40 ft/load)	2	0	2	Trailer truck	Off-site

Note(s):

a. The activity/pipeline construction methods presented are further described under "Pipeline Construction Methods."

---

Construction would generally occur between 7:00 a.m. and 6:00 p.m. Monday through Friday (10-hour work day) and 8:00 a.m. to 5:00 p.m. on Saturdays (8-hour work day). Within Griffith Park, on Crystal Springs Drive where the road is open to two-way traffic, construction would be limited to nighttime hours only. Day and/or night construction (up to 24 hours per day with Police commission approval) would occur within Griffith Park along Crystal Springs Drive, where the road is open to only one-way traffic, since the lower portion of Crystal Springs Drive would be entirely closed throughout construction within that area (Department of Recreation and Parks approval would be required). Installation of pipe would be expected to progress at approximately 120 to 160 feet per day in this area, assuming a 24-hour construction schedule.

It is estimated that a typical construction activity would require the closure of three travel lanes. Intersections where open trench construction is used would be affected for approximately four weeks with turning traffic affected considerably longer. Table 1-4 provides a description of personnel, equipment, and refueling required for each activity.

**Staging Areas.** During pipeline construction, LADWP's construction contractor would establish temporary yard locations for staging and storage of miscellaneous construction materials and equipment. The contractor(s) would be responsible for scouting and securing suitable local lots for staging areas. However, possible staging areas identified for the proposed project include Buena Vista Park, various City-owned lots within Griffith Park, or at local LADWP facilities, including the NHPS and Silver Lake Reservoir Complex.

During all phases of construction, refueling and lubrication of construction equipment would occur at the contractors' staging yard or along the construction right-of-way. Equipment would be regularly checked for leakage.

**Construction Sites.** Most of the heavy construction equipment would be delivered on lowboy trucks or trailers. Mobile cranes and dump trucks would be driven in from local contractors' yards. Construction equipment would be left overnight at the site as feasible, at the contractor yards, or at other storage yards in the area. All equipment would be lubricated, refueled, and repaired by the contractor or local servicing companies.

All construction materials would proceed to the construction areas by truck on existing roadways. For pipe delivery by truck, it is assumed that each truck would carry 40-feet of pipe. Materials that would be truck transported to the site would include: the pipe sections, pipe fittings, valve assemblies, and shoring materials; welding materials; cement, aggregate, gravel, sand, and slurry (from local plants) for backfill at street crossings; asphalt for re-paving; signs and fencing; fuel and lubrication for equipment; drinking water; and water for dust control. Alternatively, water may be available from fire hydrants or permitted water sources in the project area for hydrotesting and dust control. The amounts of each material needed would depend on the location and construction activity.

**Waste Management.** Generally, waste generation from construction would be in the form of short sections of pipe, welding, and coating as well as boxes and crates used in the shipment of materials. These materials would be sorted by metal or non-metal and typically would be hauled to local waste disposal centers. Other construction wastes would include contaminated soil that cannot be returned to the trench as backfill; rubble from trenching paved areas; and water used to

---

hydrostatically test<sup>1</sup> the pipeline. Non-hazardous wastes would be hauled to a sanitary landfill; hazardous wastes would be sent to a permitted treatment or disposal facility; and used hydrostatic test water would be treated to meet the requirements of the National Pollutant Discharge Elimination System (NPDES) hydrostatic test permit and discharged into nearby storm drains, or discharged to sewer drains within the City of Los Angeles consistent with the requirement of the Bureau of Sanitation. Construction crews would use portable chemical toilets, and trash containers would be provided at each yard for daily refuse from construction workers.

**Utility and Services Requirements.** Construction equipment would require both gasoline and diesel fuel. All construction equipment would be fitted with appropriate mufflers and all engines would be maintained regularly. Welding machines would use diesel or unleaded fuel.

Water would be used as necessary to control fugitive dust and to wash streets as a supplement to sweeping streets. In addition to the daily construction water needs, hydrostatic testing of the pipeline would also require water. Hydrostatic test water would be obtained from LADWP. For the Upper Reach, approximately 7.4 million gallons of hydrostatic test water would be used. A minimum of one separate hydrostatic test would be conducted for each of the three units (Unit 5, 6, and 7). Therefore, a maximum discharge event for any segment in the Upper Reach would be in the order of 2.5 million gallons over four days. Similarly, for the Lower Reach, approximately 11.5 million gallons of hydrostatic test water would be used for testing five units (Unit 1a, 1b, 2, 3, and 4) with a maximum discharge on the order of 4.2 million gallons over seven days. Hydrostatic test water would be pumped from the pipeline and allowed to gutter flow to the nearest storm or sewer drain.

Construction along the proposed pipeline route would require onsite diesel fuel generators for the temporary supply of electricity. Together the main pipeline activities and street work would have approximately 15 pick-up mounted welding machines, each with its own generator. In addition, utility generators would also be used for the intermittent operation of dewatering pumps, hydraulic equipment, grinders, sandblasters, temporary lights, etc.

### **Pipeline Construction Methods**

**Open Trench Excavation.** Open trench excavation is a construction method typically utilized to install pipelines and their appurtenant structures, which include maintenance holes, flow meters, valves, and vaults. In general, the process consists of site preparation, excavation and shoring, pipe installation and backfilling and site restoration (where applicable). The proposed project would be phased in work areas and each work area would typically vary between 800 and 1,000 feet. Construction usually progresses along the alignment with the maximum length of open trench at one time being approximately 500 feet in length with traffic detours beginning at least 200 feet on either side of the designated work area. The following is a description of the phases of construction for open trenching:

*Site Preparation.* Traffic control plans, where necessary, are first prepared in coordination with the City of Los Angeles and the City of Burbank to detour and delineate the traffic lanes around the work areas. The approved plans are then implemented. The existing pavement along the pipeline alignment is cut with a concrete saw or otherwise broken and then removed using jackhammers, pavement breakers, and loaders. Other similar equipment may

---

<sup>1</sup> A hydrostatic test involves filling a test section of the pipeline with fresh water and increasing pressure to a predetermined level. Such tests are designed to prove that the pipe, fittings, and weld sections would maintain mechanical integrity without failure or leakage under pressure.

---

be used. The pavement is removed from the project site and recycled, reused as a backfill material, or disposed of at an appropriate facility.

*Excavation and Shoring.* A trench is excavated along the pipeline alignment using backhoes, excavators, or other types of excavation equipment. Portions of the trench adjacent to some utilities may be manually excavated. The excavated soil may be temporarily stored in single rows adjacent to the trenches, stored at off-site staging areas, or immediately hauled off-site. As the trench is excavated, the trench walls are supported, or shored, typically with hydraulic jacks or trench boxes. Steel or wood sheeting between H-beams (e.g., beam and plate) may also be used for shoring. Other similar shoring methods may be utilized. Utilities not relocated prior to trenching are supported as excavation and shoring occurs.

If construction occurs in areas with high groundwater, the groundwater would be removed during the excavation of trenches, usually by pumping it from the ground through dewatering wells that have been drilled along the alignment. The extracted groundwater would first be treated for any contaminants, if present, before being discharged to the storm drain system under a permit issued by the Regional Water Quality Control Board.

*Pipe Installation and Backfilling.* Once the trench has been excavated and shored, pipelaying begins. Bedding material (such as sand or slurry) would be placed on the bottom of the trench. Pipe segments would then be lowered into the trench and placed on the bedding. If pipeline segments used do not include push-on joints, the segments would be welded to one another at the joints. The rate at which pipe may be installed in a single day varies, but is estimated to be installed at a rate of approximately 80 feet per day for the proposed project. Prior to backfilling, appurtenant structures would be installed as necessitated by design. After laying and attaching the pipe segments, the trench is immediately backfilled with native soils, crushed miscellaneous bases, or cement slurry. Not more than 500 feet of trench or the amount of the trench that can be backfilled in one day is left unbackfilled.

*Site Restoration.* Any portion of the roadway damaged as a result of construction activities will be repaved and restored in accordance with all applicable City of Los Angeles and City of Burbank standards. Once the pavement has been restored, traffic delineation (restriping) will also be restored.

**Jacking Method.** Pipe-jacking is utilized when open-trenching is not feasible, to avoid large substructure utilities, or to avoid the disruption of other facilities such as flood control channels (e.g., Los Angeles River). Although the installation of pipelines using jacking techniques avoids the continuous surface disruption common to open-trench construction, some surface disruption is unavoidable because jacking and receiving pits are required and may be located in street rights-of-way.

Pipe-jacking is an operation in which the soil ahead of the steel casing is excavated and brought out through the steel casing barrel while the casing is pushed forward by a horizontal, hydraulic jack which is placed at the rear of the casing. The jacking equipment utilized for this operation is placed in the jacking pit. Once the casing is placed, the pipe is installed inside the casing.

As with open trench excavation, the four primary phases for pipe-jacking are site preparation, excavation and shoring, pipe installation, and site restoration.

---

*Site Preparation.* Traffic control plans, where necessary, are first prepared in coordination with the City of Los Angeles and the City of Burbank, to detour and delineate the traffic lanes around the work areas and then implemented. In preparing to construct the jacking and receiving pits, the pavement is first cut using a concrete saw or pavement breaker. As with open-trench excavation, the pavement is removed from the project site and recycled, reused as a backfill material, or disposed of at an appropriate facility.

*Excavation and Shoring.* A jacking pit and a receiving pit are generally used for each jacking location, one at each end of the pipe segment. The distance between the pits typically ranges from 250 to 500 feet, but may be longer or shorter depending on site conditions.

For the proposed project, the size of the jacking and receiving pit for the Upper Reach would be approximately 20-60 feet long, 12 feet wide and 15-55 feet deep. Lower Reach pits would be approximately 20-40 feet long, 11-18 feet wide, and 25-45 feet deep. The pits are excavated with backhoes, cranes, and other excavation equipment. The excavated soil is immediately hauled away. As excavation occurs, the pits are shored utilizing a beam and plate shoring system.

*Pipe Installation.* Once the pits are constructed and shored, a horizontal hydraulic jack is placed at the bottom of the jacking pit. The steel casing (Upper Reach: 84-inch internal diameter. Lower Reach: 78-, 96-, 108-, and 120-inch internal diameter) is lowered into the pit with a crane and placed on the jack. A simple cutting shield is placed in front of the pipe segment to cut through the soil more easily. As the jack pushes the steel casing and cutting shield into the soil, soil is removed from within the leading casing with an auger or boring machine, either by hand or on a conveyor. Once the segment has been pushed into the soil, a new segment is lowered, set in place, and welded to the casing that has been pushed. Installation of the steel casing is expected to progress at approximately 40 feet per day for auger-bored jacked casing. Once the casing has been installed, the carrier pipe (Upper Reach: 72-inch diameter. Lower Reach: 66-, 84-, and 96-inch diameter) is then lowered and placed on the jacks, which push the pipe into the steel casing. Installation of carrier pipe is expected to progress at approximately 40 to 60 feet per day.

*Site Restoration.* After completion of the pipe installation along the jacking location, the shoring system is disassembled as the pits are backfilled, the soil compacted and the pavement above replaced. Once the pavement has been restored, traffic delineation (restriping) will also be restored.

**Tunneling.** For the purposes of this discussion, tunneling includes both micro-tunneling and traditional tunneling. These tunneling methods are described below.

**Micro-Tunneling.** Micro-tunneling involves the installation of pipeline segments concurrent with the excavation of the tunnel via a horizontal jacking machine. A tunneling machine with directional controls (sophisticated boring head or cutting shield) is utilized to excavate the tunnel directly in front of the pipeline segment. Although the name implies small diameter pipe installations, micro-tunneling is used to install pipelines up to 72 inches in diameter or more. Micro-tunneling is comprised of the excavation of access shafts, the installation of the pipeline, and the closing of the shafts.

*Shaft Excavation.* Two shafts are generally used for each section of pipeline to be installed by micro-tunneling, one at each end of the alignment. Long tunneling projects may require

---

additional shafts along the alignment. When this is the case, the distance between the shafts typically ranges from 300 feet to 400 feet, but may be longer or shorter depending on site conditions. In general, the size of the access shaft openings is proportional to the size of the pipeline that is being installed. The pits are excavated with backhoes, cranes, and other excavation equipment. The excavated soil is immediately hauled away. As excavation occurs, the pits are shored utilizing a beam and plate shoring system.

*Pipeline Installation.* Once the shafts are constructed, a horizontal hydraulic jack is placed at the bottom of one of the shafts and a pipe segment placed in the jack. A tunneling boring machine (cutting head) which is the same diameter or slightly larger than the pipeline is placed in front of the pipe segment and is hydraulically pushed against the shaft wall. As the tunnel boring machine cuts horizontally into the wall of the shaft, soil is pumped in slurry form (water mixes with the soil spoils in the shield) via flexible hoses to a settling basin where the solids settle out and the water reused. When the first pipe segment is flush with the shaft wall, the slurry hoses are disconnected and the next pipe segment lowered into the shaft. The slurry hoses are routed through the second pipe segment, which is then jacked behind the first segment. The proper slope is maintained through the use of a laser, which is mounted in the jacking shaft and focused on a grid plate at the back of the tunnel boring machine. The tunneling direction is remotely controlled using the laser mark on the grid plate to guide its direction. This process is repeated until the tunnel boring machine and pipeline reach the second shaft. Installation of the steel casing is expected to progress at approximately 64 feet per day for tunnel boring, assuming the use of a closed-face tunnel boring machine in sandy soil.

*Site Restoration.* After completion of the pipe installation along the micro-tunneling alignment, the shoring system is disassembled as the pits are backfilled, the soil compacted and the pavement above replaced. Once the pavement has been restored, traffic delineation (restriping) will also be restored.

**Traditional Tunneling.** Traditional tunneling involves the placement of the pipeline in an underground tunnel, which is excavated between two or more shafts. Traditional tunneling consists of the excavation of shafts, the excavation of tunnels, the installation of the pipeline, and site restoration.

*Shaft Excavation.* Two or more shafts are constructed as described previously for pipe-jacking and micro-tunneling.

*Tunnel Excavation.* Once the access shafts are excavated and shored, a tunnel is excavated between the shafts. Excavation of the tunnel occurs either with the use of a tunnel shield or manually with small power tools. In large tunnels, rail cars or augers are typically used to transport the excavated soil to one of the shafts. Manual excavation is typically used for shorter tunnels. As the excavation progresses, tunnel supports are constructed, assembled, and installed to prevent the tunnel from caving in. The removed soil is reused, recycled, or hauled away to a disposal site or staging area. The tunneling process proceeds until a fully supported tunnel has been constructed. Typical tunnel supports include beams and boards or pre-cast concrete linings. Beams and boards usually consist of wooden frames (beams) regularly spaced within the tunnel. Boards are positioned between each frame to support the soil above. Support linings, which have been pre-cast with reinforced concrete, are lifted into the proper position and bolted or otherwise fixed in place. Installation of tunnel liner (i.e., rib and lagging) is expected to progress at a maximum rate of 20 feet per day.



---

*Pipe Installation.* The pipeline is installed in segments following completion of the tunnel. Each pipe segment is lowered into the pit with cranes or other loading equipment, mechanically pushed, carried, or hauled into the proper position within the tunnel, and placed on wood blocks or other supports that allow for adjustments in the pipe's alignment. The joints of adjoining pipe segments are sealed as pipe placement occurs. Once the entire length of pipe has been placed in the proper position and the joints sealed, the annular space between the pipe and the tunnel wall (supports) is completely filled with grout or concrete and allowed to cure. Installation of pipe is expected to progress at a rate of approximately 40 to 60 feet per day.

*Site Restoration.* After completion of the pipe installation along the tunneling alignment, the shoring system is disassembled as the pits are backfilled, the soil compacted and the pavement above replaced. Once the pavement has been restored, traffic delineation (restriping) will also be restored.

During construction, fugitive dust emissions at the construction site during earthmoving operations would be controlled as needed by water trucks equipped with spray nozzles.

Spoils from cuts, including cuts in streets, would typically be used as backfill materials at the site of origin. Materials unsuitable for backfill use and economically not usable for other purposes would be disposed of in accordance with local and county guidelines in available landfills. It is possible that contaminated soil would be excavated during construction, especially in older industrial areas with shallow groundwater. Soil that cannot be returned as backfill would be disposed of or treated at an appropriate permitted facility.

**Slip Lining.** The slip lining method involves the placement of pipeline in an existing tunnel. If high-density polyethylene (HDPE) pipe is used to slip line, then sections of HDPE pipe are butt-fused together. The fused sections are then pulled/pushed through the existing tunnel. The space between the tunnel and pipe are then filled with grout.

## **Operation and Maintenance**

**System Operation.** A new RSC Inlet Structure is proposed to provide the new RSC pipeline with 250 cfs capacity. The new inlet structure would generally be located in the existing sump of the NHPS, except for the portion that would connect the inlet structure to the new Upper Reach of the RSC pipeline, which would be located underground and adjacent to the NHPS. The new inlet structure would serve the RSC pipeline using a bottom withdrawal configuration, that is, the outlet of the inlet structure is at its bottom. From the new inlet structure, the new RSC would flow by gravity to the Silver Lake Reservoir service area and Rowena Tank.

Operation of the RSC pipeline would be controlled by the Los Angeles Water System Data Acquisition and Control (LAWSDAC) and manually controlled when needed. Standard safety, operation, and maintenance appurtenances would include maintenance holes, shutoff gates, regulator valves, blowoffs, and air and vacuum valves.

**System Inspection and Maintenance.** Periodically, water utility crews would perform an inspection on the isolation, air, and vacuum valves. When appropriate, water utility crews would also exercise the isolation valves.

**Emergency Response.** Emergency response procedures for the new RSC pipeline would include:

- LAUSDAC identifies problem or an individual informs LAUSDAC personnel.
- LAUSDAC automated response or LAUSDAC personnel contacts appropriate managers and operations personnel who would then do the following:
  - Isolate damaged pipeline sections and provide alternate source of supply to affected areas.
  - Repair damaged pipeline section(s).

**Project Best Management Practices and Environmental Commitments**

To avoid any potential traffic/transportation impacts, construction of the proposed project would be conducted in accordance with the Standard Specifications for Public Works Construction (Greenbook), the City of Los Angeles Work Area Traffic Control Handbook (WATCH), and traffic control plans approved by the City of Los Angeles and the City of Burbank, to allow acceptable levels of service, traffic safety, and emergency access within the vicinity of the pipeline alignment during construction.

**1-11. Other Public Agency Approvals Required**

The proposed project would require the permits and approvals listed in Table 1-5 below, as well as approval by the LADWP’s Board of Commissioners.

**Table 1-5. Required Permits and Approvals**

Agency/Department	Permit/Approval	Description
<b>Federal</b>		
U.S. Army Corps of Engineers, Los Angeles District	Section 10	Section 10 of the Rivers and Harbors Act of 1899 requires approval prior to the accomplishment of any work in, over or under navigable waters of the United States, or which affects the course, location, condition or capacity of such waters. Typical activities requiring Section 10 permits are: construction of piers, wharves, bulkheads, dolphins, marinas, ramps, floats intake structures, and cable or pipeline crossings; dredging and excavation.
Federal Aviation Administration (FAA)	Approval, as necessary	Those areas of the proposed project located within 20,000 feet of the Bob Hope Airport, the height of construction equipment shall not exceed one foot in height for each 100 feet horizontal distance from the nearest point of a runway, without clearance from the FAA (City of Burbank, 1988).
<b>State of California</b>		
California Department of Fish and Game	Streambed Alteration Agreement	Any activity that proposes to divert or obstruct the natural flow or change the bed, channel or bank of any river, stream, or lake, or proposes to use any material from a streambed is required to complete a Streambed Alteration Agreement (Section 1602 of the California Fish and Game Code [§§ 1600 to 1607]).
Division of Occupational Safety and Health (Formerly CAL OSHA)	Construction Permit	A permit is required for construction of trenches or excavations which are five (5) feet or deeper and into which a person is required to descend.
Regional Water Quality Control Board (RWQCB)	NPDES Permit for construction dewatering	RWQCB approval is needed for general construction runoff and/or construction dewatering discharges under the National Pollutant Discharge Elimination System (NPDES).
	NPDES Permit for hydrostatic test water discharge	Approval is needed for discharge of hydrostatic test water into any surface water of the State of California.
	Groundwater Permit	Section 402 of the Clean Water Act of 1977, as amended (33 U.S.C. 1342 et seq.) requires a NPDES permit (No. CAG994001) for Groundwater Discharges Associated with Construction Activities to regulate discharges of treated groundwater from construction and other projects dewatering to surface waters in the Region.

Agency/Department	Permit/Approval	Description
California Department of Transportation (Caltrans)	Encroachment Permit	An Encroachment Permit is required for trenching activities near State Route 134 on-and-off ramps at Lankershim Boulevard.
<b>County of Los Angeles</b>		
Department of Public Works	Excavation Permit	Excavation Permits are necessary when any portion of the road right of way, from property line to property line, is cut for the purpose of laying down utility lines, installing electrical cabinets, installing poles or constructing manholes. In addition, this permit is needed to excavate under the Los Angeles River.
	Encroachment Permit	Encroachment Permits are necessary when you wish to place anything in the road right-of-way temporarily or long term.
	Construction Permit	A Construction Permit is necessary for activities such as cutting, removing, or reconstructing curbs, curb and gutter, parkway drains, driveways, and/or sidewalks.
Department of Public Works, Flood Control	Discharge Permit	A Discharge Permit is needed for construction dewatering and hydrostatic test water discharge into the storm system and channels.
<b>City of Los Angeles</b>		
Department of Building and Safety	Building Permits	Grading, electrical, plumbing, and mechanical permits would be needed.
Department of Public Works, Bureau of Engineering	Excavation Permit	An Excavation Permit must be obtained from the Bureau of Engineering for any trench excavation activities, as well as electrifier and pull box relocations, monitoring wells, soil borings and potholes drilling within public right-of-way
	Excavation (U) Permit	A U-Permit is required by the Bureau of Engineering for construction projects that will require public right-of-ways to be trenched or excavated. Electroliner and pull box relocations, monitoring wells, soil borings, and potholes drilling in public Right-of-Ways also need to obtain an excavation permit.
Department of Public Works, Bureau of Sanitation	Sanitation Application Form for Discharging to Sewer System	Approval for discharging hydrostatic test water to the sewer system is required from the Bureau of Sanitation. A Sanitation Application Form must be submitted to the Department of Public Works, Bureau of Sanitation.
Metropolitan Transportation Authority	Approval	Construction along Lankershim Boulevard (Unit 5) would pass above the North Hollywood MTA Station, and potentially affect operations.
<b>City of Los Angeles</b>		
Department of Transportation	Traffic Control Plan	Approval is needed for temporary lane closures and traffic/transportation – related issues during construction.
Department of Recreation and Parks	Right-of-entry Permit	Coordination of construction activities is required for activities within Griffith Park and Mulholland Memorial Park.
<b>City of Burbank</b>		
Public Works Department	Excavation Permit	Excavation Permits are issued for construction projects requiring excavation, trenching or any type of digging in the City of Burbank right of way (including Buena Vista Park).
	Encroachment Permit	Temporary and long-term Encroachment Permits are issued to allow the use of City-owned right of way. In addition to completing the permit application form, applicants must meet the City's insurance requirements for Public Works permits.
	Industrial Waste Permit	Industrial Waste Permits are issued to sewer customers discharging industrial waste as part of the City's wastewater pretreatment program.
	Street Use Permit	Street Use Permits are issued to allow the complete or partial closure of sidewalks or streets for specific, short-term purposes (BMC Chapter 29, Articles 17 and 23). Depending on the street use requested, the permit may require traffic control plans. Permits requiring traffic control plans are generally routed through the Traffic Division for approval.
	Transportation Permit	Transportation Permits are issued for the transportation of oversized loads in the City of Burbank (BMC Chapter 29, Article 25).
Community Development Department, Building Division	Building Permits	Grading, electrical, plumbing, and mechanical permits would be needed.

---

## 2. Environmental Determination

---

### 2.1 Environmental Factors Potentially Affected

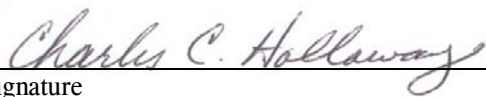
The environmental factors checked below would be potentially affected by that project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Aesthetics                      | <input type="checkbox"/> Agricultural Resources                        | <input checked="" type="checkbox"/> Air Quality            |
| <input type="checkbox"/> Biological Resources            | <input type="checkbox"/> Cultural Resources                            | <input type="checkbox"/> Geology/Soils                     |
| <input type="checkbox"/> Hazards and Hazardous Materials | <input type="checkbox"/> Hydrology/Water Quality                       | <input type="checkbox"/> Land Use/Planning                 |
| <input type="checkbox"/> Mineral Resources               | <input checked="" type="checkbox"/> Noise                              | <input type="checkbox"/> Population/Housing                |
| <input type="checkbox"/> Public Services                 | <input type="checkbox"/> Recreation                                    | <input checked="" type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Utilities/Service Systems       | <input checked="" type="checkbox"/> Mandatory Findings of Significance |  |

### 2.2 Determination (To be completed by the Lead Agency)

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT (EIR) is required.
- I find that the proposed project MAY have a “potentially significant impact” or “potentially significant unless mitigated” 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 EIR is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

  
Signature

August 24, 2004  
Date

Charles C. Holloway  
Supervisor of Environmental Assessment  
Los Angeles Department of Water and Power

### 3. Evaluation of Environmental Impacts

The following discussion addresses impacts to various environmental resources, per the Environmental Checklist Form contained in Appendix G of the State CEQA Guidelines.

#### 3.1 Aesthetics

**AESTHETICS** - Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**a. Would the project have a substantial adverse effect on a scenic vista?**

*NO IMPACT.* Scenic vistas are those that offer high-quality views of the natural environment. There are no designated scenic vistas in the immediate vicinity of the proposed project or in sufficiently close proximity such that views from those vistas would be adversely affected by the proposed project. Therefore, the proposed project would have no adverse effect on a scenic vista.

**b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?**

*NO IMPACT.* The proposed project does not lie within the viewshed of a State scenic highway. While the proposed project site is located near the Mulholland Scenic Parkway Specific Plan area, the site itself is not located within the plan area. The closest officially designated State scenic highway is State Route 2, which is approximately eight miles northeast of the project area. Therefore, the proposed project would have no impact on a State scenic highway or other scenic roadway, nor would it have the potential to substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, within a State scenic highway.

**c. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?**

*LESS-THAN-SIGNIFICANT IMPACT.* The proposed project would involve the construction of an underground potable water pipeline with appropriate appurtenant structures and a new inlet structure. The proposed project pipeline would be located underground and not visible to passers-by. Because the pipeline would be placed underground, operation of the pipeline would not affect the visual character of the surrounding areas. Some of the appurtenant structures (such as valves and cabinets) would be aboveground, within the sidewalk portion of the public right-of-way (for on-street segments of the alignment) or in open space/recreation areas along the proposed alignment. These structures would be placed, as necessary, along the alignment. These structures are common elements of the urban environment, and are not anticipated to substantially degrade the existing visual character or quality of the areas adjacent to the proposed alignment. The new inlet structure proposed for the NHPS building, which is an existing structure in the North Hollywood area, is expected to occur within the existing structure and underground. Therefore, any visual change would be slight and would not substantially degrade the existing character of the area. The proposed project's visual impacts would be temporary and limited to the construction phase. Therefore, impacts to the visual character of the surrounding area would be less than significant.

**d. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?**

**LESS-THAN-SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED.** Without appropriate mitigation measures, construction of the proposed project would have the potential to create a new source of substantial light or glare, which would adversely affect nighttime views in the project area. As discussed in the project description, construction activities outside of Griffith Park are expected to occur during daylight hours. Therefore, nighttime construction lighting, which would have the potential to create a new source of substantial light or glare, would not be required. However, within Griffith Park construction is anticipated to occur during nighttime hours, and construction lighting would be necessary. To avoid light- or glare-related impacts or reduce impacts to a less-than-significant level within and near Griffith Park, LADWP shall implement the following mitigation measures:

- AES-1** LADWP shall use the minimum amount of construction lighting necessary to safely light the construction worksite.
- AES-2** LADWP shall design, install, and shield all necessary construction lighting such that it minimizes the amount of spill or reflected light onto property adjacent to the construction site.
- AES-3** LADWP shall notify all persons and organizations potentially affected by nighttime lighting and shall coordinate the construction schedule such that conflicts are minimized. Coordination shall involve provision of an LADWP contact person to whom affected persons may direct lighting complaints. Persons and organizations to be contacted include, but are not limited to, the Griffith Park Observatory, the Los Angeles Zoo, the Gene Autry Museum of Western Heritage, and the California Department of Transportation (Caltrans).

### 3.2 Agricultural Resources

**AGRICULTURAL RESOURCES** - In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agricultural farmland. Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Involve other changes in the existing environment, which, due to their location or nature, could individually or cumulatively result in loss of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**a. Would the project 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?**

**NO IMPACT.** No part of the proposed project is located on or near 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 (DOC, 2004a). According to the California Department of Conservation, the California Resources Agency tasked with overseeing Farmland conservation efforts, the area of the proposed project is not mapped and therefore cannot be considered Farmland (DOC, 2004a).

**b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?**

*NO IMPACT.* No part of the proposed project alignment is located on or near land zoned for agricultural use or subject to a Williamson Act contract (DOC, 2004b).

**c. Would the project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?**

*NO IMPACT.* The proposed project would compensate for loss of water storage within the LADWP water distribution system, and respond to the current water requirements of the City of Los Angeles. Therefore, the proposed project would not induce growth, which could result in the conversion of Farmland to non-agricultural use. The proposed project traverses heavily urbanized lands within the Cities of Los Angeles and Burbank, and would not directly affect any agricultural land. Therefore, the proposed project would not involve any changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use.

### 3.3 Air Quality

**AIR QUALITY** - Where available, the significance criteria established by the applicable air quality management or pollution control district may be relied upon to make the following determinations. Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Expose sensitive receptors to substantial pollutant concentrations?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**a. Would the project conflict with or obstruct implementation of the applicable air quality plan?**

*NO IMPACT.* The Federal Clean Air Act requires jurisdictions of non-attainment areas to prepare air quality plans that demonstrate strategies for achieving attainment. Air quality plans developed to meet federal requirements are referred to as State Implementation Plans (SIPs). The California Clean Air Act also requires plans for non-attainment areas with respect to the State standards. Within the project study area, the South Coast Air Quality Management District (SCAQMD) and the Southern California Association of Governments (SCAG) have responsibility for preparing an Air Quality Management Plan (AQMP), which addresses the Federal and State Clean Air Act requirements. The AQMP details goals, policies, and programs for improving air quality and establishes thresholds for daily emissions. Environmental review of individual projects within the region must demonstrate that daily construction and operational emission thresholds, as established by the SCAQMD, would not be exceeded, nor would the number or severity of existing air quality violations be increased.

The proposed project would replace the existing RSC pipeline, which is over 50 years old and nearing its reliability and capacity design life limits, and would replace the existing RSC Inlet Structure, which currently results in significant air entrainment and excessive head losses. Implementation of the proposed project would not affect local or regional population or employment and would therefore be consistent with SCAG's Growth Management Plan. The proposed project would be inconsistent with air quality plans if it would result in population and/or employment growth that exceeds the growth

estimates included in the applicable air quality plan (SCAQMD, 1993). The proposed project would not require any additional LADWP employees for operations. Because there would be no employment growth generated by the proposed project, the proposed project would not conflict with or obstruct implementation of SCAQMD's AQMP.

The SCAQMD Rules and Regulations constitute a significant part of the attainment plan. Applicable rules and regulations for the proposed project may include: Rule 401 Visible Emissions; Rule 402 Nuisance; Rule 403 Fugitive Dust; Rule 1110.2 Emission from Gaseous- and Liquid-Fueled Engines; Rule 1113 Architectural Coatings; and Rule 1166 Volatile Organic Compound Emission from Decontamination of Soil. The proposed project would be constructed and operated in compliance with all SCAQMD rules and regulations; therefore, the proposed project would not conflict with or obstruct implementation of SCAQMD's AQMP.

**b. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?**

**POTENTIALLY SIGNIFICANT IMPACT.** The proposed project would be located in the Los Angeles County sub-area of the South Coast Air Basin (SCAB), which is under the jurisdiction of the SCAQMD. Project-related air emissions would have a significant effect if they resulted in concentrations that create either a violation of an ambient air quality standard or significantly contribute to an existing air quality violation. Should ambient air quality already exceed existing standards, the SCAQMD has established specific significance threshold criteria to account for the continued degradation of local air quality. Table 3.3-1 presents the allowable contaminant generation rates at which construction and operational emissions are considered to have a significant regional effect on air quality within the SCAB.

**Table 3.3-1. Regional Significance Thresholds**

Air Pollutant	Construction Phase	Operational Phase
	(lbs/day)	(lbs/day)
Reactive Organic Gases (ROGs)	75	55
Carbon Monoxide (CO)	550	550
Nitrogen Oxides (NO <sub>x</sub> )	100	55
Sulfur Oxides (SO <sub>x</sub> )	150	150
Particulates (PM <sub>10</sub> )	150	150

Source: SCAQMD, CEQA Air Quality Handbook, 1993.

Note: The SCAQMD no longer requires construction activities to be evaluated by quarterly thresholds (SCAQMD, 2001).

Project-related construction traffic and operation of diesel equipment would have a temporary effect on air quality in the vicinity of the proposed project. Construction worker vehicles and diesel-powered equipment would emit reactive organic compounds (ROCs), CO, NO<sub>x</sub>, SO<sub>x</sub>, and PM<sub>10</sub>. In addition, fugitive dust in the form PM<sub>10</sub> would be generated onsite during earth moving operations such as trenching, and would be generated offsite along haul truck travel routes. These emissions would increase local concentrations temporarily, but would not be expected to increase the frequency of violations of air quality standards.

To estimate the maximum daily construction emissions, the one day during the course of the construction period that would have the most concurrent active construction activities would be identified. Initial analysis indicates that air quality emissions associated with construction would exceed the significance criteria shown in Table 3.3-1 and would therefore cause a potentially significant impact. Mitigation measures, such as a Fugitive Dust Emission Control Plan, modification of the construction schedule, equipment and fuel selection, and restrictions on diesel engine idle time would reduce air quality emissions and will be considered as part of the EIR to reduce significant impacts due to construction of the project. A detailed air quality emissions analysis will be conducted and impacts will be evaluated in the EIR.



---

Long-term air quality impacts are those associated with the change in permanent usage of the project site. Air pollutant emissions associated with the operation of the RSC pipeline and inlet structure would be minimal and only generated during periodic maintenance and inspection activities. Therefore, operational air quality impacts are anticipated to be less than significant and will be evaluated further in the EIR.

- c. ***Would the project 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)?***

***POTENTIALLY SIGNIFICANT IMPACT.*** The proposed project would result in the generation of air pollutants in an area classified as non-attainment and could contribute to air quality violations, which would result in significant air quality impacts. To identify and assess potential impacts, a detailed air quality emissions analysis will be conducted in the EIR. As necessary, mitigation measures will be developed as part of the EIR to reduce significant impacts to the extent feasible.

Cumulative impacts during the operation of the proposed project would not occur. Only minor emissions associated with service vehicles and small pumps, as well as intermittent civil and preventative maintenance activities, would be expected during project operation. These activities would be temporary in nature and would not create substantial emissions.

- d. ***Would the project expose sensitive receptors to substantial pollutant concentrations?***

***POTENTIALLY SIGNIFICANT IMPACT.*** The proposed project could result in exposure of sensitive receptors (e.g., local residents, schools, hospitals, nursing homes) to substantial pollutant concentrations during construction. While these impacts would be limited in duration at any one location, construction could result in potentially significant air quality impacts. To identify and assess potential impacts, a detailed air quality emissions analysis will be conducted in the EIR. As necessary, mitigation measures will be developed as part of the EIR to reduce significant impacts from construction of the proposed project to the extent feasible.

- e. ***Would the project create objectionable odors affecting a substantial number of people?***

***LESS-THAN-SIGNIFICANT IMPACT.*** Any odors (e.g., odors from construction vehicle emissions) that would be generated by the proposed project would be controlled in accordance with SCAQMD Rule 402 (Nuisance Emissions). Other than construction vehicle operation, no activities are anticipated to occur, and no materials or chemicals would be stored along the pipeline alignment or in staging areas, that would have the potential to cause odor impacts during the construction of the proposed project (including the inlet structure, pipeline, and any appurtenant structures). Also, the operation of the proposed project would not include any activity that would create odors. Therefore, no significant odor impacts would be anticipated to occur and no mitigation is required.

### 3.4 Biological Resources <sup>2</sup>

BIOLOGICAL RESOURCES - Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) either individually or in combination with the known or probable impacts of other activities through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a. *Would the project 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?*

*LESS-THAN-SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED.*

**Regional Setting.** The regional climate of the Los Angeles Basin is Mediterranean with most precipitation occurring in the winter months with a slightly increasing trend from south to north. Mountains and foothills reaching to approximately 1,500 feet above sea level surround the proposed project area. Surface water originating in these elevated areas historically formed drainages that pass through the sub-basins formed at the foothills of the mountains and then to the Pacific Ocean. Most of the natural flow through the basin has since been regulated or diverted, and substituted with surface runoff and stormwater.

The proposed project is located within the south coast bioregion, within the southwestern California region of the California Floristic Province, which includes Ventura and Orange Counties, most of Los Angeles County and portions of San Bernardino, Riverside, and Imperial Counties. Natural vegetation of the southwestern California region includes woodlands, riparian forests, wetlands, dunes, as well as most of the chaparral and coastal scrub vegetation in Southern California.

A more ecosystem-based classification, includes the project area within the California Coastal Sage and Chaparral Ecoregion, which supports a diversity of habitats including montane conifer forests,

<sup>2</sup> Information used in preparing the Biological Resources Section was derived from:

- Records of sensitive species locations from the California Natural Diversity Database (CDFG, 2004) and the Inventory of Native Plants from the California Native Plant Society (CNPS), and
- Reconnaissance-level field surveys of the project area conducted in April and May 2004.

---

Torrey pine woodland, cypress woodlands, southern walnut woodlands, oak woodlands, riparian woodlands, chamise chaparral, inland and coastal sage scrub, grasslands, vernal pools, and freshwater and salt marshes. Coastal sage scrub, chamise chaparral, and oak woodlands dominate much of the landscape. Coastal sage scrub is a diverse and globally rare habitat type occurring in coastal terraces and foothills below 1,000 meters, interspersed with chamise chaparral, oak woodland, grasslands, and salt marsh. This habitat type is characterized by low, aromatic and drought-deciduous shrublands of black sage (*Salvia mellifera*), white sage (*Salvia apiana*), Munz's sage (*Salvia munzii*), California sage (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), bush sunflower (*Encelia californica*), toyon (*Heteromeles arbutifolia*), lemonade-berry (*Rhus integrifolia*), and a diverse assemblage of other shrubs, herbaceous plants, cacti, and succulents. Cholla (*Opuntia* sp.), yucca (*Yucca* sp.), and dudleya (*Dudleya* sp.) are some of the most common succulent genera, with the latter represented by several locally endemic species. Coastal sage scrub is an endangered ecosystem that supports high species diversity. The region is listed by conservation organizations as an Endemic Bird Area (EBA) with a very high number of endemic scrub species. Located on highly valued coastal real estate and threatened by human development, the ecoregion represents the struggle between preservation and human development (WWF, 2004).

Notwithstanding the natural setting of the project area, the Los Angeles Basin has been extensively developed and, as a result, undisturbed habitat is generally found only in areas where steep topography precludes development and is considered increasingly rare by state and local agencies. When the last remaining portions of the Los Angeles River were channelized and paved in the late 1950s, this marked the transition of the Los Angeles area to a primarily urban environment. But even though most of the drainages, creeks, and rivers in the Los Angeles area have been covered, channelized or lined because of development, they also contain some of the last remaining habitat for biological resources.

**Local Setting.** The diversity and distribution of biological resources along the proposed RSC alignment are affected by climate and topography, but mostly by the extreme pressures of urbanization. The proposed RSC alignment traverses primarily residential and commercial land uses; however, approximately five miles along Units 1a, 1b, 2 and 3 of the proposed RSC alignment (Figure 1-2), occupies open space and recreational areas that support the majority of the biological resources that could be found along the alignment. To a lesser degree, Units 7 and 4 traverse recreational areas that also provide some wildlife habitat and may serve as corridors for wildlife movement. Within these units the primary area where biological resources are concentrated is Griffith Park, which is also a Significant Ecological Area (SEA), and then to a lesser extent, the Griffith Park Equestrian Trail, Buena Vista Park, the Los Angeles River crossing at Buena Vista Park, Forest Lawn Memorial Park, and Rowena Reservoir. SEAs, including the Griffith Park SEA, were identified to preserve and protect regional biodiversity; construction within an SEA is not precluded, although projects in these areas are subject to a higher level of review so that the habitat value of the SEA is protected.

The Los Angeles River at the proposed pipeline crossing is concrete lined. Soft-bottomed reaches of the River are located further to the west near the Sepulveda Basin, beyond project influence, and where the Los Angeles River turns south as it passes by Griffith Park parallel to I-5, ranging from approximately 500 to 2500 feet from the alignment. Tributaries to the Los Angeles River are located 0.5 miles or more from the alignment. The alignment may also be traversed by run-off from the adjacent hillsides during rain events.

Most of the vegetative cover present within the alignment consists of ornamental and cultivated species or ruderal species, which are those that thrive in disturbed or depleted environments. From where the alignment crosses the Los Angeles River and passes through Griffith Park however, there

---

are patches of oak woodland, willow riparian, coastal scrub and chaparral vegetation or species associated with those plant communities.

Ruderal species that can be found along the alignment include non-native brome grasses (*Bromus* spp.), millet grass (*Piptatherum millaceum*), wild oats (*Avena fatua*), telegraph weed (*Heterotheca grandiflora*), black mustard (*Brassica nigra*), jimson weed (*Datura stramonium*), sow thistle (*Sonchus asper*), red-stemmed filaree (*Erodium cicutarium*), poison oak (*Toxicodendron diversilobum*), tree tobacco (*Nicotiana glauca*), sweet clover (*Melilotus albus*), horse weed (*Conzia canadiensis*), and milk thistle (*Silybum marianum*). These species can be mixed with nonruderal species such as California manroot (*Marah fabaceus*), cliff aster (*Malacothrix saxatilis*), caterpillar phacelia (*Phacelia cicutaria*), California sagebrush (*Artemisia californica*), heartleaf penstemon (*Keckiella penstemon*), prickly pear cactus (*Opuntia littoralis*), and coyote brush (*Baccharis pilularis*). Other invasive non-native species include vinca (*Vinca* sp.), English ivy (*Hedera helix*), and lantana (*Lantana camara*).

Several other native trees and shrubs that occur along the proposed project alignment within the segment from Buena Vista Park through Griffith Park include coast redwood (*Sequoia sempervirens*), western sycamore (*Platanus racemosa*), coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), laurel sumac (*Malosma laurina*), sugar bush (*Rhus ovata*), ceanothus (*Ceanothus* sp.), manzanita (*Arctostaphylos* sp.), and toyon (*Heteromeles arbutifolia*). Within this segment there are also some very large, mature ornamental trees within 500 feet of the alignment such as common hackberry (*Celtis occidentalis*), southern magnolia (*Magnolia grandiflora*), California fan palm (*Washingtonia filifera*), Mexican fan palm (*Washingtonia robusta*), and Chinese elm (*Ulmus parvifolia*).

Some of the bird species observed during the survey of the proposed project area include American crow (*Corvus brachyrhynchos*), Anna's hummingbird (*Calypte anna*), mourning dove (*Zenaida macroura*), and red-tailed hawk (*Buteo jamaicensis*). Other common birds expected to occur in the project area include turkey vulture (*Cathartes aura*), American kestrel (*Falco sparverius*), western scrub jay (*Aphelocoma coerulescens*), and California towhee (*Pipilo crissalis*). Mammals likely to inhabit the proposed project alignment include raccoon (*Procyon lotor*), California ground squirrel (*Spermophilus beecheyii*), brush rabbit (*Sylvilagus bachmani*), and striped skunk (*Mephitis mephitis*). Larger mammals that may inhabit the Griffith Park SEA include bobcat (*Felis rufus*), coyote (*Canis latrans*), and mule deer (*Odocoileus hemionus*). Additionally, a number of reptile and amphibian species are known to occur in the project area. The most common include king snake (*Lampropeltis getulus*), western fence lizard (*Sceloporus occidentalis*), and western rattlesnake (*Crotalus viridis*). Due to the proximity of urban development, the area is frequented by domestic and feral cats (*Felis catus*) and dogs (*Canis domesticus*).

**Special Status Species.** Special status species include flora, fauna, and vegetation communities that are listed as threatened or endangered, candidate species, or species of special concern under the California or federal Endangered Species Act, species that are listed as fully protected by the California Department of Fish and Game (CDFG), and plants considered by the California Native Plant Society (CNPS) to be rare, threatened, or endangered in California and beyond.

In this area the California Natural Diversity Database (CNDDB) (CDFG, 2004) identifies remnants of the following priority plant communities within one mile of the proposed project alignment: southern sycamore alder riparian woodland; southern California walnut woodland; and southern coast live oak riparian forest.

A records search of the CNDDB and CNPS rare find database identified occurrences of Parish's saltbush or brittlescale (*Atriplex parishii*) (CNPS List 1B) and Nevin's barberry (*Berberis nevinii*) (federally and state listed as endangered) within one mile of the proposed project alignment. The occurrence of Parish's saltbush was identified in 1994 north of Griffith Park, which includes the

---

approximate area where the alignment would cross the Los Angeles River. The species may be found in alkali meadows and vernal pools, which are not present within or near the alignment. Nevin's barberry has been located within Griffith Park about 0.5 miles west of Wilson Golf Course. It prefers slopes and sandy washes. There is a short segment of approximately 1,100 feet of the alignment within Griffith Park that deviates from the road right-of-way into adjacent slopes (Figure 1-2). The species was not observed in this segment during the reconnaissance visit, but a more careful survey should be carried out once the alignment is finalized, prior to ground disturbance.

A third species, not identified by the CNDDDB in this area, but that might still be a concern is Braunton's milk-vetch (*Astragalus brauntonii*) (federally listed as endangered). This species prefers recently burned or disturbed areas in chaparral, coastal scrub and grasslands, and could possibly occur along the same segment of the alignment within Griffith Park.

The only faunal species identified by the CNDDDB was the burrowing owl (*Athene cunicularia*) (California species of special concern) with a potential occurrence in a broadly defined area near the southern terminus of the alignment that extends to the Rowena and Silver Lake Reservoirs. However, in this segment, the alignment remains on residential property and existing road right-of-way, which makes it highly unlikely that the owl would be affected by the project.

Raptors were observed at Rowena Reservoir, at the Los Angeles River crossing and in Griffith Park. These species may utilize the project area for foraging and roost sites may occur in some of the large pines and other landscape or native trees located along the proposed alignment. The Migratory Bird Treaty Act (MBTA) makes it unlawful to pursue, hunt, take, capture or kill; attempt to take, capture, kill or possess any migratory bird, part, nest, egg or product. Birds protected by the MBTA include raptors and almost all other native bird species.

The remainder of the alignment, outside of the segment from Buena Vista Park through Griffith Park, does not support native habitat where special status plant or wildlife species might be found. However, birds protected by the MBTA may be present throughout segments of the alignment occupied by residential or open space. Because their presence may frequently be transient (e.g., temporary resting or foraging), compliance with the Act is typically monitored from the presence of nests or nesting pairs.

**Impact Analysis.** There are no special status plants or wildlife species known to occur within or that have been located within 500 feet of the construction footprint of the proposed project alignment. For those special status species that are identified within one-mile of the proposed project alignment, the habitat is generally unsuitable. The only exception to this assessment of habitat quality is an approximately 700 foot long segment of the alignment within Unit 1a that would deviate from the right-of-way (Zoo Drive) and passes through sage scrub and chaparral vegetation on the northern slopes and foothills of Mount Lee. This area may support habitat for special status plant species. Although the reconnaissance visit did not identify any such species within this segment, the visit took place following a lower than normal rainy season and therefore, a more careful survey during the spring would confirm the absence of rare plants. The project would be designed such that this portion of Unit 1a would be constructed underground and the jacking pits at both ends would be located outside the native vegetation to the extent feasible (see Mitigation Measure BIO-2, below) and therefore, minimal surface disturbance would occur.

Although it is unlikely that rare plants are present within this segment, or that they would be affected by construction of the proposed project, the fact that Griffith Park supports some of the last remaining native habitat within the Los Angeles Basin warrants a more careful confirmation that this impact will be less than significant. Therefore, the following mitigation measures are recommended to reduce impacts to less-than-significant levels.

---

**BIO-1** Rare plant surveys shall be carried out in the off-road segment of the proposed project alignment in Unit 1a and in any segment of the proposed alignment through Griffith Park that would pass through native vegetation or vegetation that contains native species. Surveys shall be completed no later than April or May 2005, depending on growth conditions. In the event that the rare plant surveys yield positive results, LADWP would comply with applicable rules and regulations.

**BIO-2** To protect existing natural plant communities, LADWP shall use below ground construction in Unit 1a where the alignment deviates from Zoo Drive within Griffith Park. The dimensions of the jacking pits shall be minimized or the pits shall be placed to avoid direct or indirect impacts to native plant communities or native or nonnative mature trees, to the extent feasible.

- b. Would the project 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?*

*LESS-THAN-SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED.* Approximately 700 feet of the project alignment in Unit 1a would deviate from the right-of-way (Zoo Drive) and cross through natural plant communities along the northern foothills of Mount Lee. As noted above however, the design insures that there will be no surface disturbance for pipeline construction in this area.

Hydrostatic test water would be discharged to the storm or sewer drain systems. The maximum volume for any single discharge event in the Upper Reach would be 2.5 million gallons and 2.9 million gallons for the Lower Reach. If these volumes are discharged to a soft-bottomed segment of the Los Angeles River or its tributaries over a short duration then erosion and other hydrologic, temperature or chemical changes to the aquatic environment may occur at or downstream of the discharge point. The Storm Water Pollution Prevention Plan (SWPPP) for the NPDES permit will address this potential impact (see Section 3.8, Water Resources); however, the following measure will specifically ensure that impacts to aquatic life are less than significant.

**BIO-3** In those units where the discharge point for hydrostatic test water would be located within or upstream of soft-bottomed segments of the Los Angeles River (specifically in the soft-bottomed segment adjacent to Griffith Park) or its tributaries, the rate of discharge of the water shall be compatible with the range of flows naturally occurring within the affected reach during that time of the year to avoid or reduce impacts to the aquatic environment. This measure shall be implemented to the degree possible without conflicting with any requirements imposed by the Regional Water Quality Control Board.

- c. Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) either individually or in combination with the known or probable impacts of other activities through direct removal, filling, hydrological interruption, or other means?*

*NO IMPACT.* The proposed project alignment would cross a concrete-lined portion of the Los Angeles River near the Buena Vista Park at the intersection of Highway 134 and Riverside Drive. The crossing would be below ground and the entrance and exit jacking pits would be located the shortest permitted length from the Los Angeles River. Although the Corps has jurisdiction over the action that would affect the Los Angeles River, no jurisdictional wetlands would be affected. Therefore, the proposed project would not directly or indirectly affect wetlands subject to Corps' jurisdiction under Section 404 of the Clean Water Act.

- 
- d. *Would the project 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?*

*LESS-THAN-SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED.* The proposed project alignment would cross residential, park and open space areas that support native and nonnative trees and shrubs that provide habitat to birds protected under the MBTA (i.e. Units 1a, 1b, 2 and 3). In addition there are wildlife populations in Griffith Park that move freely between natural and recreational areas. Trenches, jacking pits, pipeline storage areas may all obstruct wildlife movement, and because the construction pattern is lengthy and linear it would not be easy for wildlife to avoid the disturbance. However, temporary plates/covers would be used to cover trenches and pits to minimize effects on wildlife movement. Nighttime construction would occur in Unit 2 over approximately 290 days (see Table 1-3) along Crystal Spring Drive. In this segment, there is substantial tree cover and some ground cover, but the area is disturbed by relatively constant daytime traffic, recreational facilities and recreational users. During pipeline construction however, light, noise and vibration disturbance would be relatively constant, and disrupt the wildlife that is accustomed to nighttime activity to avoid the typical daytime disturbance. The construction period is temporary, but would essentially cover one to two wildlife breeding seasons. Wildlife in the park consists of relatively common species able to recover from such a disturbance. Still, because Griffith Park is a natural area that is relatively isolated from the Santa Monica Mountains to the west, it is an inherently sensitive ecosystem that warrants careful implementation of the following measures to reduce construction disturbance and ensure that impacts are reduced to less than significant.

- BIO-4** LADWP shall employ a qualified biological monitor with suitable background and experience to identify sensitive biological resources and monitor implementation of all the biological mitigation measures within natural areas, open space or parks where sensitive biological resources may be present, namely Units 1a, 1b, 2, 3 and 4.
- BIO-5** Pre-construction bird surveys shall be conducted in all vegetated areas of Units 7, 1a, 1b, 2, 3 and 4 from Buena Vista Park through Griffith Park. The surveys shall identify the presence of breeding or nesting pairs or active nests of special status bird species within the project and construction footprint and an additional distance of 500 feet. In the event that surveys indicate habitat occupied by special status bird species within 500 feet of the construction or project footprint, appropriate construction protocol will be developed and implemented.
- BIO-6** LADWP shall manage their construction site, and related facilities, in a manner to avoid or minimize impacts to the local biological resources by implementing the following within Units 7, 1a, 1b, 2, 3 and 4 in the segments from Buena Vista Park through Griffith Park:
- Temporarily cover pits and trenches or provide wildlife escape ramps or an approved exclusionary fence for construction areas that contain steep walled holes or trenches that are not required to be covered for human safety reasons. The temporary fence shall be hardware cloth or of similar materials that are approved for use by the U.S. Fish and Wildlife Service and the California Department of Fish and Game;
  - Make certain all food-related trash will be disposed of in closed containers and removed at least once a week. Feeding of wildlife shall be prohibited;
  - Prohibit pets from being brought to the site;
  - Report all inadvertent deaths or injuries of wildlife to the biological monitor who will in turn, notify and follow instruction provided by the City of Los Angeles Department of Recreation and Parks (LADRP) or the City of Burbank Department of Parks and Recreation (BDPR);

- 
- Use native coastal sage scrub, chaparral species in the restoration of land temporarily disturbed during pipeline installation (see Mitigation Measures BIO-7 through BIO-9 below);
  - Restore temporarily disturbed sites to their pre-existing physical condition; and
  - Ephemeral drainages shall be restored to pre-construction topography/contours and compaction immediately following construction and installation activities. Furthermore, the proposed disturbance to such features may not affect (i.e., act as a barrier to) existing surrounding hydrologic conditions.

*e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

*LESS-THAN-SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED.* Within the City of Los Angeles, the proposed project alignment may directly eliminate or indirectly impact mature native oak trees greater than eight inches in diameter that are covered by the City of Los Angeles Tree Protection Ordinance, Sec. 46.00 of the Municipal Code. In addition, project construction would result in the potential removal, pruning or damage to large, mature native and nonnative trees in Units 7, 1a, 1b, 2, 3 and 4, particularly trees present in Buena Vista and Griffith Parks. The number of affected trees has not yet been determined. Those trees located along the street right-of-way on Zoo Drive and Crystal Springs Drive (that include native mature oaks) may not be within the pipeline width, but may be affected by the construction width, which would be much greater (approximately 30 feet wide inclusive of the pipeline). The habitat value of these trees is relatively less than for trees that persist in natural communities, and many of these trees stand between the street and adjacent recreational facilities. Within the segment that deviates from Zoo Drive in Unit 1a, approximately 350 feet passes through a park area where approximately nine mature native and nonnative trees could be affected. These trees are adjacent to natural communities in the upland and they have clearly been present in the park for many years such that they also have natural historical value that cannot be quantified. Native and nonnative trees may also be present in Units 5, 6, and 7, but these generally are small trees located in residential areas that do not have natural historical or habitat value.

The LADWP would comply with Los Angeles Municipal Code Sec. 46.00 that requires a permit for the removal or relocation of mature native oak trees. Essentially the permit requires that an oak tree report be completed by an approved expert that indicates the species, size, condition and location of the affected oak trees and that the report provides a plan for protection, replacement, or relocation of the affected trees.

Unlike native oak trees, other mature native trees are not protected by any ordinance or regulation within the City of Los Angeles. They are however, addressed by policies established by the City of Los Angeles Department of Public Works (LADPW) and the City of Los Angeles Department of Recreation and Parks (LADRP). Also, Sec. 62 of the Los Angeles Municipal Code requires that a permit be obtained from the Street Tree Division of the Public Works Department for the removal of any tree on City streets or public property. Removal of more than three trees may also require review and approval by the Board of Public Works.

The LADWP would also comply with the City of Burbank Municipal Code, Sec. 28-111, which requires tree replacement if removal of street trees for construction is necessary. According to the code, trees shall be replaced with a tree of the nearest size available, of a species and in the location to be determined by the Director of Parks and Recreation or the cost of the tree and removal by the City shall be reimbursed. Section 28-115 also states that all trees on any street or other publicly owned property near any excavation or construction shall be sufficiently guarded and protected so as to prevent any injury to said trees. No person shall excavate any ditches, tunnels, trenches, or pavement within a radius of ten feet from any public tree without prior notification to the Director.



This impact is potentially significant, but would be reduced to less than significant with implementation of Mitigation Measure BIO-2 and the following mitigation measures, which are intended to avoid or reduce impacts to mature native and nonnative trees.

**BIO-7** LADWP shall complete a report that identifies all mature native and nonnative trees that would be directly or indirectly impacted by project construction. For ease of interpretation “mature” shall be defined consistent with the City of Los Angeles’ tree protection ordinance as 8 inches in diameter and greater than 4.5 feet high and applicable City of Burbank requirements. This includes all trees whose canopy is located entirely or partially within the pipeline alignment or construction footprint. It shall include trees that are located in segments where underground jacking will occur. The report shall indicate the location, species, size and condition of affected trees and a proposed plan for protection, relocation or replacement. The report shall be provided to the LADRP, Division of Forestry, the Los Angeles Department of Public Works (LADPW), and the BDPR.

**BIO-8** LADWP shall coordinate with the LADPW and the LADRP prior to construction to determine the applicable measures that need to be implemented from the LADPW Street Tree Policy and the LADRP Tree Preservation Policy. LADWP shall also coordinate with the BDPR. The purpose of this coordination shall be to identify construction protocols that would be implemented to reduce construction damage, and the pruning, removal and replacement of trees, including heritage trees, special value trees and common park trees.

**BIO-9** For any mature native or nonnative tree that must be removed, LADWP shall prefer replacement or relocation of trees within the same park or residential area in coordination with the LADPW or BDPR, as applicable, for trees affected on city streets, or LADRP or BDPR, as applicable, for trees affected within city parks. Nonnative trees removed within Griffith Park that cannot be successfully relocated shall be replaced with native trees consistent with LADRP recommendations.

*f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

*NO IMPACT.* The proposed project would not conflict with any applicable habitat conservation plans or natural community conservation plans because no such plans cover the proposed project alignment or immediate surrounding area. The County of Los Angeles designates Griffith Park as a SEA. The SEA designation is intended to preserve and protect regional diversity; however SEAs do not preclude limited compatible development. Therefore, no impacts would occur under this criterion.

### 3.5 Cultural Resources

**CULTURAL RESOURCES** - Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of an historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

---

**a. *Would the project cause a substantial adverse change in the significance of an historical resource as defined in §15064.5?***

***LESS-THAN-SIGNIFICANT IMPACT.*** A Phase I Cultural Resources Investigation of the proposed RSC pipeline alignment was conducted by McKenna et al. (2004)<sup>3</sup>. McKenna et al. completed a standard records check through the California State University, Fullerton, South Central Coastal Information Center. In addition, McKenna et al. completed research through the Bureau of Land Management General Land Offices files, the University of California Riverside, Historic Map Library, and local libraries and historical societies. The City of Los Angeles listing of local Monuments was also researched. The research was conducted at a level that addressed the entire RSC pipeline alignment and approximately one-quarter mile to either side of the alignment (one-half mile corridor). Site records, cultural resource management reports, and documentation on listed properties and/or historic maps were also researched.

The proposed project crosses three United States Geological Survey (USGS) quadrangles: the Van Nuys Quadrangle, the Burbank Quadrangle, and the Hollywood Quadrangle. Within the Van Nuys Quadrangle, historic and prehistoric resources have been found along or near the proposed alignment, specifically historic refuse and one prehistoric bowl. As such, the project alignment identified on the Van Nuys Quadrangle should be considered moderately sensitive for cultural resources. Resources identified on the Burbank Quadrangle, where the majority of the proposed project alignment would be located, tend to cluster in two areas: near Lankershim Boulevard and the Universal City property (north of the Hollywood Freeway) and north of the Warner Bros. Studios (north of the Ventura Freeway). There is also an area of sensitivity in Griffith Park. Given the extent of the known resources and the lack of definitive data for areas not previously surveyed (prior to urban development), the proposed project alignment within this area should be considered sensitive for cultural resources. Only a short segment of the proposed alignment would be located on the Hollywood Quadrangle. Nonetheless, there are resources in the general area, including the Glendale Southern Pacific Railroad Depot, the Charles and Mabel Ennis House (State Historic Landmark 1011), and two California Historical Landmarks (1902 and 1921). There are also a number of Los Angeles Historical/Cultural Monuments including the Tierman House (No. 124), the William Mulholland Memorial Fountain (No. 162), the First Official Walt Disney Studio (No. 163), the Glendale Hyperion Bridge (No. 164), the Fletcher Drive Bridge over the Los Angeles River (No. 322), the Engine Company No. 56 (No. 337), the Silver Lake and Ivanhoe Reservoirs (No. 422), and the “Little Nugget” Travel Town at Griffith Park (No. 474). The resources listed above are relatively close to the proposed alignment, but on privately held properties and not within the roadway right-of-ways. Though considered significant (by nature of their listings), none of these resources would be directly or indirectly impacted by the proposed project as all would be avoided by the proposed route. These resources are at least 50 feet from the proposed pipeline excavation route and temporary ground shaking would not affect the resources. As a result, it has been determined that the proposed project would have a less-than-significant impact to known historic resources.

**b. *Would the project cause a substantial adverse change in the significance of a unique archaeological resource pursuant to §15064.5?***

***LESS-THAN-SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED.*** The records search described above and field surveys conducted in May 21 and 22, 2004, resulted in confirmation that archeological resources have been identified in areas adjacent to the proposed pipeline alignment. This is especially true in the areas near Universal City, the Warner Bros. Studios, and the area north of Silver Lake Reservoir (McKenna, 2004).

---

<sup>3</sup> Results of a Phase I Cultural Resources Investigation of the Proposed Los Angeles Department of Water and Power River Supply Conduit, Los Angeles County, California, prepared by McKenna et al., is available for review at the LADWP Environmental Services Office, located at 111 North Hope Street, Room 1044, Los Angeles, CA 90012.

---

In general, all areas subjected to prior research have resulted in the identification of either standing structures of historic significance (see above) or archeological (buried) resources (e.g., refuse concentrations or evidence of habitation). To further address archeological resources, Native American Consultation was conducted by McKenna et al through contact with the Native American Heritage Commission and through letters to all identified Native American contacts within Los Angeles County. McKenna et al. also consulted with the current Chair of the Gabrielino/Tongva of Los Angeles County.

Although no archeological resources have been identified specifically within the proposed project alignment, construction would require a considerable amount of excavation relatively close to known site areas and has the potential to uncover additional archeological resources. This is especially true in areas of previous finds. Therefore, Mitigation Measures CUL-1 and CUL-2 are recommended to reduce impacts to archeological resources to a less-than-significant level.

**CUL-1** LADWP shall conduct archaeological monitoring during all ground disturbing activities within Units 7 and 4, specifically those areas near Universal Studios, Warner Bros. Studios, and the area north of the Silver Lake Reservoir. Cultural resource monitoring locations shall be mapped and flagged prior to construction. Monitoring shall be conducted by a qualified archaeological monitor familiar with the cultural resources of southern California.

In the event a potential significant archeological resource is discovered, all work shall temporarily cease within the immediate area of the find until the site can be assessed by a qualified archeologist in consultation with the LADWP. If the material is determined to be significant, the qualified archeologist shall prepare and implement a treatment plan in consultation with the LADWP. Construction activity shall not resume until authorization has been provided by the LADWP and the qualified archeologist.

**CUL-2** LADWP shall require the qualified archeologist to provide a cultural resources briefing prior to the start of construction for all construction personnel. If construction personnel discover a cultural resource in the absence of an archeological monitor, construction shall be halted and a qualified archeologist shall be contacted to make an immediate evaluation of significance and recommend appropriate treatment of the resource.

**c. *Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?***

*LESS-THAN-SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED.* McKenna et al.'s (2004) investigation/research through the Natural History Museum of Los Angeles County determined that no known fossil finds have been reported in the proposed project area. There are, however, older alluvial deposits in the area of the Los Angeles River flood plain and these deposits have been known to yield paleontological specimens. For this reason, deep excavations (anything greater than eight feet is considered deep by the City of Los Angeles) in the area of the Los Angeles River flood plain, if planned, should be monitored by a professional paleontological monitor (McKenna, 2004). Mitigation measures CUL-3 and CUL-4 would be implemented to reduce impacts to paleontological resources to a less-than-significant level.

**CUL-3** LADWP shall conduct paleontological monitoring during all ground disturbing activities (excavation, trenching, boring, drilling, etc.) in the area of the Los Angeles River flood plain. Paleontological resource monitoring locations shall be mapped and flagged prior to construction. Monitoring shall be conducted by a qualified paleontologist familiar with paleontological resources of southern California. In the event a potentially significant paleontological specimen is uncovered, all work shall temporarily cease within the immediate area of the find until the specimen can be removed and assessed by the qualified

paleontologist. If the material is determined to be significant, an adequate course of action shall be determined in consultation with the qualified paleontologist and LADWP, consistent with the Standards of Professional Paleontologists. Construction activity shall not resume until authorization has been provided by the LADWP and the qualified paleontologist.

**CUL-4** LADWP shall require the qualified paleontologist to provide a briefing prior to the start of construction for all construction personnel. If construction personnel discover a paleontological resource in the absence of a monitor, construction shall be halted and a qualified paleontologist shall be contacted to make an immediate evaluation of significance and recommend appropriate treatment of the resource.

*d. Would the project disturb any human remains, including those interred outside of formal cemeteries?*

*LESS-THAN-SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED.* As discussed in the Phase I Cultural Resources Investigation conducted by McKenna et al. (2004) for the proposed RSC pipeline alignment, ethnographic and ethnohistoric sources were consulted and these sources verify that the proposed project area falls within the boundaries of Gabrielino territory. This territory extends from San Gabriel and San Bernardino Mountains to the coast; from Aliso Creek (in Orange County) north to the San Fernando Valley; and includes Santa Catalina, San Nicolas, and San Clemente Islands. Although no known burial grounds have been identified along the proposed project alignment, the possibility of uncovering human remains exists. To reduce impacts associated with the disturbance of human remains to a less-than-significant level, the following mitigation measure shall be implemented:

**CUL-5** In the event that human remains or potential human remains are discovered, construction activities within the immediate area of the find shall be immediately halted. The LADWP Construction Project Manager shall immediately notify the LADWP Project Manager and the County Coroner. The County Coroner will make a determination as to the origin of the remains and, if determined to be of Native American origin, the Native American Heritage Commission (NAHC) will be contacted. In consultation with the Most Likely Descendant, the NAHC and qualified archeologist shall determine the disposition of the remains in accordance with California Health and Safety Code §7050.5 and CEQA Guidelines §15064.5(e). If the remains are not of Native American origin, the County Coroner will make a determination as to the disposition of the remains. Construction may continue once compliance with all relevant sections of the California Health and Safety Code have been addressed and authorization to proceed issued by the County Coroner and the LADWP.

### 3.6 Geology and Soils

**GEOLOGY AND SOILS** - Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**GEOLOGY AND SOILS** - Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**a. Would the project expose people or structures to potential 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.**

**LESS-THAN-SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED.** The proposed project does not cross any mapped Alquist-Priolo Earthquake Hazard Zones, however it does cross the Hollywood-Santa Monica fault and is located within a City of Los Angeles Fault Rupture Study Zone. Additionally, the Lower Reach is located almost entirely within a Fault Rupture Study Zone as designated by the Safety Element of the Los Angeles City General Plan (1996a). The Hollywood-Santa Monica fault is, at a minimum, a potentially active fault. A recent fault study (Dolan et al., 2000) indicates evidence of seismic activity<sup>4</sup>, including fault rupture, approximately 6,000 to 11,000 years ago. Therefore, there is a potential for damage to the pipeline due to fault rupture. Impacts from this type of movement can be mitigated with appropriate design measures. Impacts associated with fault rupture would be reduced to less-than-significant levels with incorporation of the following mitigation measure.

**GEO-1** A geotechnical investigation shall be conducted as indicated by the *Engineering Standards Manual, Water Operating Division, Department of Water and Power, City of Los Angeles, Second Edition, Effective August 3, 1992, Chapter 10, Section 10.03*. This investigation shall be conducted by a qualified professional, and conform to local and State requirements. This investigation shall identify the trace of the Hollywood-Santa Monica fault, and based on the findings of this investigation appropriate mitigation measures may be developed to reduce potential damage due to fault rupture. Results of this geotechnical investigation will support design considerations of constructing fault rupture mitigation measures and/or repairing the damaged pipeline. Construction and operation issues should be considered during design to identify practical measures that can be implemented within the urban setting along the Lower Reach.

<sup>4</sup> An active fault, as defined by the CGS (1999), is a fault which has had surface rupture within Holocene time (the last 11,000 years). A fault is deemed sufficiently active if there is evidence of Holocene surface displacement along one or more of its segments or branches.

---

*ii) Strong seismic ground shaking?*

*LESS-THAN-SIGNIFICANT IMPACT.* The proposed project area will be subject to ground shaking associated with earthquakes on faults of both the San Andreas and Transverse Ranges fault systems. The Los Angeles area has many active and potentially active faults and may be subjected to moderate to strong ground shaking. The closest major active and potentially active faults in the area include the Santa Monica, Hollywood, Raymond Hill, Northridge Thrust, Verdugo and Sierra Madre faults. Other faults in the vicinity include Benedict Canyon fault, Elysian Park Blind Thrust, and Newport-Inglewood fault.

Seismic shaking maps by the California Geological Survey (CGS) predict a 10 percent chance of exceedance in 50 years of 0.5 to 0.6 g (gravity) peak ground acceleration (CGS, 1998 and 2001) in the proposed project area. This moderate ground shaking is not likely to cause significant damage to a buried pipeline.

*iii) Seismic-related ground failure, including liquefaction?*

*LESS-THAN-SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED.* Seismic-related ground failures such as liquefaction, lurching, lateral spreading, and differential settlement can result from strong ground shaking. The proposed project alignment would be located almost entirely within areas mapped as having potential for seismically induced liquefaction (CGS, 1998 and 1999). Liquefaction-related phenomena occur when seismic shaking of loose, cohesionless, saturated sand deposits temporarily lose strength and behave as a liquid. Liquefaction-related phenomena generally occur in areas of shallow groundwater (depths of 50 feet or less). Historically measured groundwater levels for the project area range from 0 to 30 feet below ground surface (CGS, 1998 and 2001). Areas of greatest potential for earthquake induced liquefaction phenomena occur near the Los Angeles River and within the loose alluvial deposits along the southern edge of the San Fernando Valley.

Lateral spreading is the horizontal component of soil movement toward an unsupported face or slope that results from liquefaction of underlying layers. Surface fissures on gently sloping ground are a common feature of lateral spreading and reflect the horizontal movement ranging from a few inches to several feet. The Los Angeles River channel within the proposed project area has vertical concrete sidewalls which could potentially fail during an earthquake resulting in lateral spreading.

Ground lurching, heaving and cracking were noted at the alluvium-bedrock contact in foothill areas after the San Fernando earthquake. Three units (Units 1b, 2, and 3) within the Lower Reach of the RSC pass along the alluvium-bedrock contact at the base of the eastern Santa Monica Mountains (Griffith Park area). Ground lurching near the base of the hills may impact the proposed pipeline.

Differential or seismic settlements are generally attributed to seismically induced densification of loose granular materials as well as due to loss of material through liquefaction induced lateral spreading. Settlements associated with densification of unconsolidated soils, in the absence of water, are generally nominal. Seismic settlements of the alluvial deposits in areas of shallow groundwater along the RSC alignment may potentially impact the proposed project.

Ground failure, including liquefaction, differential settlement, and ground lurching could impact the proposed project where the pipeline is located within liquefiable alluvial deposits near the Los Angeles River. Implementation of Mitigation Measure GEO-2 would ensure impacts from seismic-related ground failure, including liquefaction, are reduced to less-than-significant levels.

**GEO-2** A geotechnical investigation shall be conducted to determine areas that will be susceptible to liquefaction related phenomena and ground lurching. This investigation shall be conducted by a qualified professional and conform to the requirements of the City of Los Angeles. Based on the findings of this investigation, appropriate mitigation measures may be developed to reduce potential damage due to liquefaction related phenomena. Results of

---

the geotechnical investigation will support design considerations of constructing liquefaction and ground lurching mitigation measures and/or repairing the damaged pipeline. The latter option is the standard practice for non-hazardous pipelines and typically includes consideration of economic factors.

**iv) Landslides?**

*NO IMPACT.* Generally, only small, but abundant, landslides occur on the steep slopes in the project vicinity. However, these shallow small landslides will not affect pipeline construction or operation. Land subsidence due to any of several mechanisms is not expected to occur along the proposed project alignment. Based on the placement of the pipeline underground, primarily beneath existing roadways and right-of-ways, the proposed project is not expected to be impacted by landslides or to create a landslide hazard.

**b. Would the project result in substantial erosion or the loss of topsoil?**

*NO IMPACT.* Construction of the proposed project would require significant trenching, however the alignment would pass primarily through relatively level areas that have been previously disturbed (i.e. paved streets and developed park land). No significant erosion or loss of topsoil is expected in these areas due to project construction. The final pipeline would be operated underground and would have no impact on erosion.

**c. Is the project 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 onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?**

*NO IMPACT.* The proposed project is located in the southeastern San Fernando Valley, near the eastern terminus of the Santa Monica Mountains. The San Fernando Valley is an east-west structural trough within the Transverse Ranges geologic province of southern California. The mountains that bound the trough are actively deforming anticlinal ranges bounded on their south sides by thrust faults. As these ranges have risen and deformed, the San Fernando Valley has subsided and been filled with sediment. The southeastern portion of the valley has received sediment from the Los Angeles River, Tujunga wash and small drainages of the Santa Monica Mountains and Verdugo Mountains due to uplift and subsequent erosion.

The San Fernando Valley within the proposed project area is largely covered by an alluvial plain, which extends from the north to the Los Angeles River. The major sources of sediment that make up this plain have been the river systems of the Tujunga and Pacoima washes and the Los Angeles River. Sediment in the study area is composed of deposits of sand, silt, and gravel. The U.S. Department of Agriculture's (USDA) Soil Survey of the San Fernando Valley Area (1917) indicates that soils underlying the proposed project area consist of three main soil series; the Altamont, Tujunga, and Yolo Series. Altamont series soils are typically clayey soils derived from fine grained sandstones and shales and are found on gently sloping to steep upland hills. Tujunga series soils are characteristically deep, well drained soils formed in predominately granitic derived alluvium and flood plain deposits. The Yolo series consists of fine to silty loam formed on level to moderately sloping alluvial fans. Additionally, varying amounts of artificial fill are expected to underlie the roads along the proposed project alignment.

The proposed project alignment would be located along relatively flat terrain consisting primarily of previously disturbed soil and alluvial deposits. Construction and operation of the proposed pipeline through these materials would not result in instability of these units.

- d. **Is the project located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994) creating substantial risks to life or property?**

*NO IMPACT.* Soils in the proposed project area are mainly alluvial and have expansion potential ranging from low to high. Guidelines for trench backfill in the *Engineering Standards Manual, Water Operating Division, Department of Water and Power, City of Los Angeles, Second Edition, Effective August 3, 1992, Chapter 7, Section 7.12* indicates that only suitable native soil, sand-cement slurry, or suitable sand shall be used as bedding and trench backfill. The use of select bedding material and approved trench spoil material will prevent impacts from expansive soil.

- e. **Would the project 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?**

*NO IMPACT.* The proposed project would not involve septic tanks or alternative wastewater disposal systems. Construction and operation of the proposed project would not affect any existing, or hinder future, septic tanks or alternative wastewater disposal systems, or the soils that would adequately support those systems. Therefore, no impacts related to soil compatibility with septic or other alternative wastewater systems would occur and no mitigation is required.

### 3.7 Hazards and Hazardous Materials

HAZARDS AND HAZARDOUS MATERIALS - Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Create a significant hazard to the public or the environment through the reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Impair implementation of or physically interferes with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- a. **Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

*LESS-THAN-SIGNIFICANT IMPACT.* Construction of the proposed project would involve the excavation and transport of paving materials (e.g., asphalt, concrete, road bed fill materials) and soils that could possibly be contaminated by vehicle-related pollution (e.g., oil, gasoline, diesel, and other automotive chemicals). All such paving, road bed materials and soils would be transported and



---

disposed of in accordance with applicable codes and regulations of the U.S. Department of Transportation, U.S. Environmental Protection Agency, California Department of Toxic Substances Control, California Highway Patrol, and California State Marshal. Such transport and disposal is not expected to create a significant hazard to workers or the surrounding community.

During construction small quantities of hazardous materials, such as petroleum hydrocarbons and their derivatives (e.g., gasoline, oils, lubricants, and solvents), would be required to operate the construction equipment. These materials would be used with large construction equipment (e.g., cranes, compactors, forklifts, excavators) and would be contained within vessels engineered for safe storage. Storage of substantial quantities of these materials along the pipeline alignment or in staging areas is not anticipated. Construction vehicles would require on-site refueling, and may require routine or emergency maintenance that could result in the release of oil, diesel fuel, transmission fluid or other materials; however, the materials would not be used in quantities or stored in a manner that would pose a significant hazard to the public or the workers themselves. Therefore, impacts from the routine transport, use, or disposal of hazardous materials during construction would be less than significant.

Operation of the proposed project would involve the conveyance of potable water under pressure, and would not require the use, storage, or disposal of hazardous substances. Therefore, operation of the proposed project would not create impacts related to the routine transport, use, or disposal of hazardous materials and no mitigation is required.

- b. Would the project 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?***

*LESS-THAN-SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED.* As described above in Section 3.7(a), the proposed project would not involve the use of substantial quantities of hazardous materials that would pose a risk to the public. Before commencing any excavation, the construction contractor would be required to obtain an “Underground Service Alert Identification Number.” To minimize potential damage to any existing utilities, the contractor would not be allowed to excavate until all utility owners are notified, and all substructures are clearly identified. Additionally, as part of the construction activities (described in the project description), LADWP’s construction contractor would be required to develop a construction plan, emergency response plan, spill prevention plan, or similar documents. These documents would identify specific sites for fuel storage, to adequately provide setbacks from existing water bodies (approximately 100-foot minimum) and water wells (approximately 200-foot minimum), and to provide requirements for hazardous material containment (e.g., earthen berms lined with plastic). Storage or use of hazardous materials in or near wet or dry streams would be consistent with the Fish and Game Code and other State laws. Furthermore, LADWP’s contractor would be required to have available adequate spill containment and cleanup resources on site at all times and be prepared to contain, control, clean up, and dispose of any potential fuel spill quickly and completely. During construction, project personnel would follow all applicable rules and regulations governing the storage, transportation, use, handling, and disposal of hazardous materials.

In addition to the above best management practices (BMPs), Mitigation Measures HAZ-1 through HAZ-5 would be implemented to reduce the potential and extent of an upset or accident condition involving the release of hazardous materials during construction to less-than-significant levels.

Operation of the proposed project would involve the transportation of potable water under pressure via an inlet structure and underground pipeline. Operation would not create a significant hazard to the public or environment involving the release of hazardous materials. Therefore, no reasonably foreseeable upset or accident conditions that could involve the release of hazardous materials into the

---

environment are anticipated during operations. As such, no impacts are anticipated during operations and no mitigation is required.

**HAZ-1** LADWP or its construction contractor shall store fuel, oil, and other hazardous materials only at designated sites. Quantities of all hazardous materials stored on-site shall be avoided or minimized, and substitution of non-hazardous materials for hazardous materials shall be implemented to the extent practicable. Each hazardous material container shall be clearly labeled with its identity, handling and safety instructions, and emergency contact. Similar information shall be clearly available and visible in the storage areas. Storage and transfer of such materials shall not be allowed within 100 feet of streams or sites known to contain sensitive biological resources except with the permission of LADWP environmental compliance monitors. Material Safety Data Sheets shall be made readily available to the Contractor's employees and other personnel at the various work sites. The accumulation and temporary storage of hazardous wastes shall not exceed 90 days. Soils contaminated by spills or cleaning wastes shall be contained and shall be removed to an approved disposal site. Disposal of hazardous wastes shall be in compliance with the applicable laws and regulations.

**HAZ-2** LADWP or its construction contractor shall maintain construction equipment to minimize fuel, oil and other potentially hazardous material spills. Stationary power equipment, such as engines, pumps, generators, welders, and air compressors, shall be positioned over drip pans.

**HAZ-3** LADWP or its construction contractor shall store hazardous materials in containers with secondary containment.

**HAZ-4** In case of a spill or accident involving hazardous materials, LADWP or its construction contractor shall immediately notify the Los Angeles County Fire Department. All other federal, state, and local notification requirements shall be followed for any release that exceeds the reportable quantity or threatens to have a significant impact.

**HAZ-5** LADWP or its construction contractor shall protect tanks temporarily placed for refueling from potential traffic hazards by vehicle barriers.

**c. *Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?***

*LESS-THAN-SIGNIFICANT IMPACT.* As discussed in Section 3.3, Air Quality, operation of construction equipment would produce air contaminant emissions. None of these emissions are expected to be generated at levels that are considered hazardous. Construction of the proposed project would also involve the excavation and transport of paving materials (e.g., asphalt, concrete, and road bed fill materials) and soils that could possibly be contaminated by vehicle-related pollution (e.g., oil, gasoline, diesel, and other automotive chemicals). All such materials would be transported and disposed of in accordance with applicable codes and regulations. Such transport and disposal is not expected to involve acutely hazardous materials, substances or waste. Several schools are located within one-quarter mile of the proposed project alignment, including Lankershim Elementary School (5250 Bakman Avenue, North Hollywood), Providence High School (511 South Buena Vista Street, Burbank), and Ivanhoe Elementary School (2828 Herkimer Street, Los Angeles). However, construction of the proposed project is not anticipated to have an adverse effect on these facilities, given the limited scale and temporary nature of construction activities.

Operation of the proposed project would not involve hazardous emissions or materials. The proposed project would transport potable water under pressure beneath existing public rights-of-way and open space/recreation areas. If there were any emergency condition related to the proposed project, the

---

result would involve the release of potable water, which poses no health threats; therefore, less-than-significant impacts to schools are anticipated and no mitigation is required.

- d. ***Would the project be located on a site that 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?***

***LESS-THAN-SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED.*** Existing and past land use activities are used as potential indicators of hazardous material storage and use. For example, many industrial sites, historic and current, are known or suspected to have soil or groundwater contamination by hazardous substances. Properties devoted to oil production, including oil fields and processing facilities, are commonly known or suspected to have environmental contamination from petroleum hydrocarbons, heavy metals, and chlorinated solvents. Other examples of hazardous material sources include leaking underground tanks in commercial and industrial areas, surface runoff and groundwater migration from contaminated sites, and pesticides and herbicides in the soil of past agricultural lands. In addition to contaminants found in soils, groundwater is subject to contamination associated with underground storage tanks and other sources.

The primary issues of concern related to contamination are: (a) worker health and safety and (b) public exposure to hazardous materials during construction and offsite waste handling. Potential impacts on air quality and traffic during waste transport must also be considered. Where encountered, contaminated soil may qualify as hazardous waste and thus require handling and disposal according to local, State, and federal regulations.

A government records search was conducted for the proposed project alignment that identified hazardous materials sites listed pursuant to Government Code Section 65962.5. Environmental Data Resources, Inc. (EDR) conducted a search designed to meet the government records search requirements of the American Society for Testing and Materials' Standard Practice for Environmental Site Assessments. A summary of the results of the search is provided in Table 3.7-1<sup>5</sup>.

Based on the EDR database search, many sites have been identified in the surrounding area and adjacent to the proposed alignment, as shown in Table 3.7-1, which are listed in various databases compiled pursuant to Government Code Section 65962.5 (EDR, 2004). Although these facilities are listed on government hazardous materials databases, the storage, use, and disposal of such hazardous materials, or historic releases of such materials, is not expected to present a risk to the public or the environment as a result of the proposed project. If, during construction or operation of the proposed project, contamination is discovered with the potential to create a significant hazard to the public or the environment, the applicable regulatory agency would be contacted and the appropriate corrective actions undertaken to eliminate the hazard.

To further minimize the potential of creating a significant hazard to the public or the environment as the result of the discovery of hazardous materials along the pipeline alignment, the following mitigation measure is recommended to reduce impacts to less-than-significant levels.

---

<sup>5</sup> Environmental Data Resources, Inc. government records search results for the RSC Project are available for review at the LADWP Environmental Services Office, located at 111 North Hope Street, Room 1044, Los Angeles, CA 90012.

**Table 3.7-1. Target Sites within One Mile of the Proposed Project Alignment**

<b>Database List</b>	<b>Search Distance (0-1.0 mile)</b>
National Priority List (NPL)	3
Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)	9
CERCLIS sites designated "No Further Remedial Action Planned" (CERCLIS-NFRAP)	22
Handlers with Resource Conservation and Recovery Act (RCRA) Corrective Action Activity (CORRACTS)	3
Resources Conservation and Recovery Information System for sites that treat, store, or dispose of waste (RCRIS-TSD)	1
Resources Conservation and Recovery Information System of Large Quantity Generators (RCRIS-LQG)	63
Resources Conservation and Recovery Information System of Small Quantity Generators (RCRIS-SQG)	480
Emergency Response Notification System (ERNS)	72
California DTSC's Annual Workplan (AWP)	4
Known and Potential Hazardous Substance Sites in California (CAL-SITES)	7
California Hazardous Materials Incident Report System (CHMIRS)	62
CORTESE	122
NOTIFY 65	2
TOXIC PITS	1
Solid Waste Facilities/Landfill Sites (SWF/LF)	10
Waste Management Unit Database System (WMUDS/SWAT)	10
Leaking Underground Storage Tank (LUST)	122
Hazardous Substance Cleanup Bond Act sites (BEP)	4
Underground Storage Tank (UST)	89
Low level threat properties with DTSC oversight (VCP)	2
California Facility Inventory Database (CA FID UST)	375
Historical UST	340
Record of Decision (ROD)	2
Facilities Index System (FINDS)	607
Hazardous Materials Incident Report System (HMIRS)	6
Material Licensing Tracking System (MLTS)	2
PCB Activity Database (PADS)	3
Formerly Used Defense Sites (FUDS)	3
RCRA Administration Action Tracking System (RAATS)	1
Toxic Chemical Release Inventory System (TRIS)	10
Toxic Substance Control Act (TSCA)	5
Federal Insecticide, Fungicide and Rodenticide Act (SSTS)	3
FIFRA, TSCA and EPCRA Tracking System (FTTS)	14
Aboveground Storage Tank Database (AST)	7
Dry Cleaners	60
California Water Resources Control Board – Waste Discharge System (WDS)	71
Recorded land use restrictions (DEED)	1
List of DTSC sites that do not pose a problem to the environment or to public health (NFA)	6
Emissions Inventory Data (EMI)	98
Sites where contamination has not been confirmed and do not require direct DTSC Site Mitigation Program action or oversight (REF)	10
School sites being evaluated by DTSC (SCH)	9
California Spills, Leaks, Investigations, and Cleanups (CA SLIC)	5
Hazardous waste manifests (HAZNET)	1,348
Sites requested to have DTSC oversee investigation and/or cleanup activities (VCP)	2
<b>TOTAL</b>	<b>4,076</b>

Source: EDR, 2004.

Note: Only databases where sites were found are listed in the table. Sites may be listed in multiple databases.

---

**HAZ-6** LADWP shall establish an environmental training program to communicate environmental concerns and appropriate work practices, including spill prevention, emergency response measures, and implementation of proper best management practices, to all construction personnel. The training program shall emphasize site-specific physical conditions to improve hazard prevention (e.g., identification of potentially hazardous substances and sites along the pipeline route) and shall include a review of all site-specific plans. A monitoring program shall also be implemented to ensure that the plans are followed throughout the period of construction.

- e. *For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 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?*

*NO IMPACT.* The NHPS (northernmost portion of pipeline alignment) is located approximately one mile west of the Bob Hope Airport (formerly known as Burbank-Glendale-Pasadena Airport), approximately 4.5 miles south-southeast of Whiteman Airport in Pacoima, and approximately six miles east of the Van Nuys Airport. According to the Burbank General Plan, part of the proposed project would be within the Airport Approach Area for Bob Hope Airport, which imposes restrictions on building heights (City of Burbank, 1988). For example, at the north end of the pipeline alignment along Lankershim Boulevard, which is the closest point on the alignment to Bob Hope Airport, construction equipment heights would be limited to approximately 50 feet without FAA approval. Per the Federal Code of Regulations (CFR), 49 CFR Part 77 (§ 77.15), construction would not need approval if the equipment were to be shielded by existing structures of a permanent and substantial character of equal or greater height, and would be located in the congested area of a city where it is evident beyond all reasonable doubt that the equipment would not adversely affect safety in air navigation. LADWP would obtain FAA approval as necessary to meet the height limitations specified. Therefore, construction of the proposed project would not affect airport activities during construction.

Operation of the proposed project would occur underground and within existing structures (NHPS), therefore building height restrictions would not be exceeded. Consequently, the proposed project would not result in an airport-related safety hazard for people residing or working in the project area. Once operational, the proposed project would be underground in public rights-of-way (e.g., roadways) and open space areas, and would not interfere with, nor be affected by, airport operations. Therefore, neither construction nor operation of the proposed project would have an impact on public airports or public use airports and no mitigation measures are required.

- 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?*

*NO IMPACT.* The proposed project is not located within the vicinity of a private airstrip. Therefore, neither construction nor operation of the proposed project would have an impact on any private airstrips and no mitigation is required.

- g. *Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

*LESS-THAN-SIGNIFICANT IMPACT.* The proposed project would not impair or physically interfere with an adopted emergency response plan or a local, state, or federal agency's emergency evacuation plan, except for possible short-term periods during construction of the proposed project, when roadway access may be limited in some areas. Construction site preparation would include the preparation and implementation of traffic control plans in coordination with the Los Angeles Department of Transportation (LADOT) to detour and delineate the traffic lanes around the work area(s). Emergency access during construction is discussed further under Transportation and Traffic

[Section 3.15(e)]. Once operational, the proposed project would be underground in public rights-of-way or in open space/recreation areas, and thus would not interfere with emergency response or evacuation plans. Therefore, less-than-significant impacts to emergency response or evacuation plans are anticipated and no mitigation is required.

**h. Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?**

**LESS-THAN-SIGNIFICANT IMPACT.** The majority of the Upper Reach of the pipeline alignment and the southern portion of the Lower Reach are located within highly urbanized areas, and are not located in close proximity to any wildlands and no wildlands are found intermixed. However, the southern portion of the Upper Reach (Unit 7), which travels through Buena Vista Park, and the northern portion of the Lower Reach (Unit 1a, 1b, 2, and a portion of Unit 3), which travels through Griffith Park, are located within portions of the City of Los Angeles Mountain Fire District and Fire Buffer Zone (City of Los Angeles, 1996b).

Construction activities within such fire hazard areas would not pose a substantial risk relative to wildland fires as long as emergency vehicle access is maintained, since construction activities would be temporary and all pipeline welding activities would occur within construction trenches or jacking pits (i.e., away from flammable vegetation). Operation of the proposed project would not expose any people or structures to a significant risk of loss, injury or death involving wildland fires, since the pipeline would be buried and would only convey potable water under pressure. Therefore, impacts would be less than significant and no mitigation is required.

### 3.8 Hydrology and Water Quality

HYDROLOGY AND WATER QUALITY - Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 (i.e., 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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 that would result in flooding on or off site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h. Place within a 100-year floodplain structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**HYDROLOGY AND WATER QUALITY** - Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j. Inundate by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**a. Violate any water quality standards or waste discharge requirements?**

*LESS-THAN-SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED.* Construction of the RSC pipeline and inlet structure would require water, as necessary, to control fugitive dust. Fugitive dust emission at the construction sites would be controlled by water trucks equipped with spray nozzles. Construction water needs would generate minimal quantities of discharge water, which would drain into existing storm drains located along the pipeline alignment.

In addition to the daily construction water needs, dewatering will be likely if construction occurs in areas of high groundwater levels. For the Upper Reach, the maximum trench depth is expected to be approximately 55-feet, whereas for the Lower Reach, excavation may be required to dive under existing substructures resulting in maximum trench depths of approximately 25 to 35 feet or more. The groundwater would be removed during the excavation of trenches, usually by pumping it from the ground through dewatering wells that have been drilled along the alignment. The extracted groundwater would first be treated for any contaminants, if present, before pumping it into storm drains located nearby, or directly into flood control channels (i.e., the Los Angeles River channel).

During construction and maintenance of the proposed RSC pipeline, hydrostatic testing would be required to be performed upon completion of all activities associated with pipeline installation, including coating, bedding, and trench backfill. As described under the Waste Management Section of the project description, a hydrostatic test involves filling a test section of the pipeline with fresh water and increasing pressure to a predetermined level. Such tests are designed to prove that the pipe, fittings, and welded sections would maintain mechanical integrity without failure or leakage under pressure. During construction of the Upper Reach, approximately 7.4 million gallons of hydrostatic water would be used. Since a minimum of one separate hydrostatic test would be conducted for each of the three units (Unit 5, 6 and 7), a maximum discharge event for any segment would be on the order of 2.5 million gallons. For the Lower Reach, approximately 11.5 million gallons of hydrostatic test water would be used. However, the pipeline would be hydrostatically tested in segments, using a fraction of that volume.

The discharge water from construction and dewatering is not expected to contain contaminants that would cause its release to violate any water quality standards or waste discharge requirements. Water discharge from construction and dewatering activities would be carried out in accordance with, and would adhere to, a SWPPP, as required by the NPDES permit. The SWPPP would be submitted to the Los Angeles Regional Water Quality Control Board (RWQCB) for review and approval prior to project construction. Compliance with the SWPPP would ensure that the potential for violating water quality standards would be less than significant.

Hydrostatic test water used for completion of all activities associated with pipeline installation, would become construction waste, and could potentially have a significant impact on waste discharge requirements. However, by implementing Mitigation Measure WQ-1 described below, impacts would be reduced to a less-than-significant level.

- WQ-1** All hydrostatic test water shall be treated for contaminants and toxic substances to meet the NPDES hydrostatic test permit before being discharged into surface waterbodies, as approved by the local Regional Water Quality Control Board or Bureau of Sanitation. All

---

hydrostatic test water that does not meet the NPDES hydrostatic test permit requirement shall be discharged to an appropriate waste handling facility and not to surface waterbodies.

- 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)?***

*LESS-THAN-SIGNIFICANT IMPACT.* During construction of the proposed pipeline, groundwater may be encountered in areas of high groundwater levels (i.e., shallow depth to groundwater). Depths to groundwater in the project vicinity would vary and may be relatively shallow, particularly in proximity to the Los Angeles River. In the Upper Reach, where 72-inch diameter pipe would be installed, the minimum trench depth would be 12-feet with a maximum of approximately 55-feet. In the Lower Reach, in jacking areas and certain open trenching areas, it may be required to dive under existing substructures resulting in maximum trench depths of approximately 25 to 30 feet or more.

Dewatering would be required in the event that groundwater is encountered during construction and operation. Dewatering would occur by pumping the groundwater through dewatering wells that have been drilled along the alignment. The extracted groundwater would first be tested and treated for any contaminants and pollutants to meet the requirements of the NPDES permit. The water would then be discharged into storm drains located nearby, or into flood control channels directly. In the event that dewatering is required, it is not expected to occur in quantities that would substantially deplete the groundwater supplies or interfere significantly with groundwater recharge.

By comparison, current public supply water use in Los Angeles County exceeds 1 billion gallons per day, with total groundwater withdrawals for public supply of approximately 524 million gallons per day (USGS, 1995). It is expected that the proposed project would use (by means of dewatering) far less than one percent of the public supply groundwater withdrawals for Los Angeles County. Therefore, it is unlikely the proposed pipeline project would result in groundwater withdrawals that would adversely affect groundwater levels. Consequently, the proposed project would not contribute to the depletion of groundwater supplies, interfere substantially with groundwater recharge, or lower the groundwater table. No significant adverse impacts to groundwater supply or recharge are expected to occur and no mitigation is required.

- 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?***

*LESS-THAN-SIGNIFICANT IMPACT.* The proposed project would be constructed along public streets and rights-of-way and through open space areas, and would not permanently alter the drainage pattern of the area. However, the proposed project would cross the Los Angeles River. The Los Angeles River, which originates in the Santa Monica and Santa Susana Mountains, is the main tributary in the Los Angeles River Watershed. The Los Angeles River extends approximately 55 miles, through the San Fernando Valley and into the Port of Los Angeles and the Port of Long Beach, where it meets the Pacific Ocean (LARWQCB, 2004). Within the project area, the Los Angeles River consists of a concrete-lined channel. Construction of the RSC pipeline beneath the river would be carried out by jacking the pipeline from Buena Vista Park, under the Los Angeles River, to Forest Lawn Drive. As such, construction of the proposed project would not alter the course of the Los Angeles River. Therefore, the proposed project would not alter the existing drainage pattern of the area, which could result in substantial erosion or siltation.



- 
- 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?*

*LESS-THAN-SIGNIFICANT IMPACT.* As discussed in Section 3.8(c), above, construction of the RSC pipeline would not alter the course of the Los Angeles River. Construction areas would also be in close proximity to three major tributaries of the Los Angeles River: the Central Branch Tujunga Wash, the Burbank Western Channel, and the Verdugo Wash (See Figures 1-2 and 1-3). The Central Branch Tujunga Wash drains portions of the Los Angeles National Forest in the San Gabriel Mountains and parallels State Route 170 (west of the project alignment) until it reaches the Los Angeles River. The Central Branch Tujunga Wash meets the Los Angeles River channel where the Los Angeles River crosses Highway 101. Unit 5 and the northern portion of Unit 6 (along Lankershim Boulevard) would parallel the Tujunga Wash, located approximately a half mile to the west.

The Burbank Western Channel drains the Verdugo Mountains, located northeast of the project alignment, and meets the Los Angeles River channel near the intersection of State Route 134 and San Fernando Road. The Verdugo Wash also drains the Verdugo Mountains, including the hills north of Burbank and Glendale, and meets the Los Angeles River channel at the intersection of Highway 5 and State Route 134 (LARWQCB, 2004). The western-most portion of Unit 1b would be constructed less than a quarter mile from where the Burbank Western Channel intersects the Los Angeles River. In addition, the northern portion of Unit 2 would be constructed less than half a mile from where the Verdugo Wash meets the Los Angeles River.

Open-trench and tunneling construction methods (i.e., jacking, micro-tunneling) would not substantially increase the rate or amount of surface runoff, or result in erosion, siltation, flooding on- or off-site. The proposed pipeline project would be constructed below grade within public rights-of-way, minimizing the potential to increase surface runoff. In addition, when and if dewatering is required, water would be pumped and discharged into storm drains located nearby, or into flood control channels directly, thereby avoiding erosion and surface run-off. Therefore, impacts are considered to be less than significant, and no mitigation is required.

- 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?*

*LESS-THAN-SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED.* Jacking would be a commonly used construction method along the proposed pipeline alignment. As such, dewatering may be required. However, water discharge from dewatering would be minimal, and is not anticipated to be released in substantial quantities. Therefore, water discharge from dewatering is not expected to exceed the existing or planned capacity of the local stormwater drainage system. No impacts would occur. Furthermore, as discussed in Section 3.8(a), the discharge water is not anticipated to contain significant quantities of contaminants. All dewatering discharges would be carried out in accordance with, and would adhere to, a SWPPP, as required by the NPDES permit. Prior to project construction, the SWPPP would be submitted to the Los Angeles RWQCB for review and approval.

In addition, fugitive dust emission at the construction sites would be controlled by water trucks equipped with spray nozzles. Construction water needs would generate minimal quantities of discharge water, which would drain into existing storm drains located along the pipeline alignment. Therefore the impact of dust control water on water quality and runoff would be adverse, but less than significant.

As discussed in Section 3.8(a), hydrostatic test water would be used for completion of all activities associated with pipeline installation. Hydrostatic test water would become construction waste, and

---

could potentially have a significant impact. However, hydrostatic test water would be mitigated to less-than-significant levels through implementation of Mitigation Measure WQ-1 [see Section 3.8 (a)].

**f. *Otherwise substantially degrade water quality?***

**LESS-THAN-SIGNIFICANT IMPACT.** Potential short-term erosion could occur during site excavation and construction activities, including backfilling, which could adversely affect surface water quality from runoff water. However, due to the linear nature of the proposed project and the limited area of ground disturbance, this effect is expected to be minimal.

Construction equipment and trash containers may potentially leak contaminants, increasing the possibility of washing contaminated runoff into nearby waterbodies. Usually, however, the amount of contaminants that would leak from construction equipment and trash containers would be relatively small. By comparison, contamination from spills at staging and refueling sites would have a higher risk, as leaked or spilled pollutants could then wash into a waterbody during a storm event and degrade the surface water quality causing potentially significant impacts. However, under the requirements of the NPDES, a SWPPP would be submitted to the Los Angeles RWQCB and/or State Water Regional Control Board. Compliance with the SWPPP would ensure that the potential for contamination during construction would be less than significant. No mitigation is required.

**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?***

**NO IMPACT.** The construction and operation of the proposed project would not involve the placement of housing or structures within a 100-year flood hazard area. The proposed RSC pipeline would be placed underground along/in City of Los Angeles and City of Burbank streets and parks. The pipeline would cross under the Los Angeles River flood control channel, thereby avoiding affects on flood flows. Therefore, no impacts are expected and no mitigation is required.

**h. *Place within a 100-year flood area structures to impede or redirect flood flows?***

**NO IMPACT.** Although portions of the project alignment are in proximity to 100-year and 500-year flood zones (i.e., in proximity to the Los Angeles River channel), as delineated by both the City of Los Angeles and the City of Burbank, construction activities near such areas would not interfere with or redirect the movement of water. The proposed pipeline would operate as an underground closed system within existing street rights-of-way, LADWP property and existing easements, and within open space/recreation areas. Therefore, no impacts are expected and no mitigation is required.

**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?***

**LESS-THAN-SIGNIFICANT IMPACT.** The proposed project would not cause, or increase the likelihood of, failure of a levee or dam that could result in flooding. As such, the proposed project would not expose people or structures to a significant risk of loss, injury or death involving flooding. In the event the proposed pipeline were to fail, LADWP emergency response procedures, as discussed in the project description, would be followed. For example, in response to a loss of pressure, safety valves throughout the water distribution system would be shut (as deemed necessary by LADWP) in order to isolate the break. The volume of potable water released in such an event would be limited to the amount of water contained in the section of pipeline between the shut-off valves, which is not expected to yield enough water to pose a threat to life or property. Therefore, less-than-significant flooding impacts are expected and no mitigation is required.

**j. *Inundation by seiche, tsunami, or mudflow?***

**LESS-THAN-SIGNIFICANT IMPACT.** The proposed project is not subject to tsunami-related inundation, as it is not located within the range of a tsunami hazard zone. However, portions of the

proposed alignment are located in areas subject to seiche and/or mudflows. Areas immediately surrounding the Silver Lake Reservoir Complex and the Rowena Tank, near the southern end of the Lower Reach, as well as Toluca Lake, near the southern portion of the Upper Reach, may be subject to seiche impacts during a seismic event. However, construction and operation of the proposed project would not increase the risk of inundation in these areas, due to the fact that construction activities would not place housing or other occupied structures near these facilities, and operation of the pipeline would occur underground. Portions of the alignment within Griffith Park are adjacent to, and downgradient from, hillside areas. Such hillside areas may be subject to mudflows during heavy storm events. Nonetheless, construction and operation of the proposed pipeline would not increase risks to people or structures relative to mudflows, since, as indicated above, the project involves no housing or other occupied structures, and operation of the pipeline would occur underground. Therefore, the potential impacts to, or from, the construction and operation of the proposed project from inundation by seiche, tsunami, or mudflow would be less than significant. No mitigation is required.

### 3.9 Land Use and Planning

LAND USE AND PLANNING – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Conflict with any applicable habitat conservation plan or natural communities conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**a. Would the project physically divide an established community?**

**LESS-THAN-SIGNIFICANT IMPACT.** A field survey of the land uses in the areas along the pipeline route was conducted. These uses are summarized in Table 3.9-1.

As presented in the table, the pipeline route would be constructed near properties that primarily consist of residential, commercial and recreational/open space land uses. Also as presented under the column “General Character/Notable Land Uses”, the proposed pipeline corridor includes established land uses, some of which include well-known businesses and recreational areas.

All construction activities would occur within existing street rights-of-way, LADWP property and existing easements, and within open space/recreation areas. These areas are existing community features and are incorporated into existing community land use patterns. Therefore, construction in these areas would not further physically divide an existing community. For construction scheduled within open space/recreation areas, LADWP has incorporated project features to limit impacts to recreational areas resulting from physical division of recreational uses. For example, as described in Section 1.10, Project Description, construction within portions of Griffith Park would occur 24 hours per day to minimize the duration of impact to this important recreational resource. Therefore, less-than-significant impacts are expected and no mitigation is required.

During operation, the proposed project would be underground and would not physically divide established communities. The project would consist of an underground potable water utility pipeline, which would be located within existing street rights-of-way, LADWP property and existing easements, and within open space/recreation areas. The RSC Inlet Structure would generally be located inside the existing NHPS sump, except for the portion that would connect the inlet structure to

the new Upper Reach of the RSC pipeline, which would be located underground and adjacent to the NHPS. This connection would also be underground. No impacts are expected during operations and no mitigation is required.

**Table 3.9-1 Summary of Land Uses along Pipeline Route**

Location	Street (ROW)	Jurisdiction	General Land Use Type	Non Residential Sensitive Receptor(s)	General Character /Notable Land Uses
<b>UPPER REACH</b>					
<b>Unit 5: North Hollywood Pump Station to Lankershim/Magnolia</b>					
Morella Ave. to Hart St.	Morella Ave.	City of Los Angeles	West: NHPS, Single-Family Residential East: Multi-Family Residential	----	<ul style="list-style-type: none"> <li>• ROW characterized generally by large to medium commercial business storefronts</li> <li>• Business types include, construction supply, clothing and household goods, large auto sale lots, strip malls, fast food restaurants, motels, and gas stations</li> <li>• A fire station, post office, and North Hollywood Amelia M. Earhart Regional Branch Public Library all located west of ROW between Tujunga Ave. and Bakman Ave.</li> <li>• MTA Metro Redline North Hollywood Station on NE corner of Lankershim and Magnolia. Redline ROW within Lankershim</li> <li>• NoHo Arts District along ROW between Chandler and Magnolia Blvds</li> </ul>
OR Hinds Ave. to Hart St.	Hinds Ave.	City of Los Angeles	West: Single/Multi-Family Residential East: NHPS, Single-Family Residential	----	
Hart St. to Lankershim Blvd.	Hart St.	City of Los Angeles	North: Single/Multi-Family Residential South: Single/Multi-Family Residential	----	
Hart St. to Magnolia Blvd.	Lankershim Blvd.	City of Los Angeles	West: Commercial East: Commercial	<ul style="list-style-type: none"> <li>• A park on SE corner of Lankershim Blvd./Tiara St. just south of Oxnard St.</li> <li>• Lankershim Elementary School east of ROW between Weddington and Magnolia Blvd.</li> </ul>	
<b>Unit 6: Lankershim/Magnolia to Riverside/Clybourn</b>					
Magnolia Blvd. to Riverside Dr.	Lankershim Blvd.	City of Los Angeles	East: Commercial West: Commercial	----	<ul style="list-style-type: none"> <li>• ROW characterized generally by a combination of low density commercial uses such as strip malls, and offices, and high density residential uses such as apartment buildings</li> <li>• At the intersection of Lankershim Blvd. and Riverside Dr. just south of the 134 Freeway, there are a gas station and a high-rise bank building.</li> </ul>
Riverside Dr. to Clybourn Ave.	Riverside Dr.	City of Los Angeles	North: Low Density Commercial & 134 Freeway South: Low Density Commercial, Multi-Family Residential	----	

Location	Street (ROW)	Jurisdiction	General Land Use Type	Non Residential Sensitive Receptor(s)	General Character /Notable Land Uses
<b>Unit 7: Riverside/Clybourn to Forest Lawn</b>					
Clybourn Ave. to Pass Ave.	Riverside Dr.	City of Burbank	North: Commercial South: Commercial	----	<ul style="list-style-type: none"> <li>• ROW characterized generally by a combination of commercial office, and residential uses</li> <li>• Land uses include strip malls, small storefronts, high-rise office buildings, and single- and multi-family residential (Including the Multi-Family West and Multi-Family South areas of the City of Burbank)</li> <li>• Majority of high-rise office buildings are generally offices of the entertainment and recording industries such as the Disney Channel, etc.</li> <li>• LADWP Substation located between Pass and Edison Blvd.</li> <li>• Warner Bros. Studios is located along the south of the ROW between W. Olive Ave. and S. California St.</li> <li>• NBC and Disney Studios are located north of the ROW and north of the 134 Freeway</li> <li>• Between Fairview St. and Buena Vista Park (Bob Hope Drive) is all single- and multi-family residential homes</li> <li>• ROW crosses under a transmission line ROW and crosses river</li> <li>• There are multiple high-circuit transmission lines and associated structures along the river ROW (Whitnall Highway Transmission Line Easement).</li> </ul>
Pass Ave. to W. Olive Ave.	Riverside Dr.	City of Burbank	North: Commercial South: Commercial	<ul style="list-style-type: none"> <li>• University of La Verne north of ROW between Pass and Maple</li> </ul>	
W. Olive Ave. to Forest Lawn Dr.	Riverside Dr.	City of Burbank	North: Commercial, Residential South: Commercial, Residential	<ul style="list-style-type: none"> <li>• Buena Vista Park north and south of ROW</li> <li>• Equestrian Trail immediately adjacent to river along maintenance road ROW</li> <li>• Forest Lawn Memorial Park (cemetery) across river on south side</li> </ul>	
<b>LOWER REACH</b>					
<b>Unit 1a: Griffith Park North along Forest Lawn Drive</b>					
Forest Lawn Dr. to L.A. Live Steamers	Forest Lawn Dr.	City of Los Angeles	North: Recreational South: Open Space	<ul style="list-style-type: none"> <li>• Equestrian trail within Griffith Park north of ROW</li> <li>• Forest Lawn Memorial Park (cemetery) south of ROW</li> <li>• Mount Sinai Memorial Park south of ROW</li> <li>• Travel Town Museum north of ROW</li> </ul>	<ul style="list-style-type: none"> <li>• ROW characterized by open space and recreational uses associated with Forest Lawn and Mount Sinai Memorial Parks and Griffith Park</li> </ul>
<b>Unit 1b: Griffith Park North along Zoo Drive</b>					
L.A. Live Steamers to Crystal Springs Dr.	Zoo Drive	City of Los Angeles	North: Recreational/Open Space South: Recreational/Open Space	<ul style="list-style-type: none"> <li>• Equestrian trail within Griffith Park north of ROW (Los Angeles Equestrian Center north of the ROW and 134 FREEWAY)</li> </ul>	<ul style="list-style-type: none"> <li>• ROW characterized by open space and recreational uses associated with Forest Lawn and Mount Sinai Memorial Parks and Griffith Park</li> </ul>

Location	Street (ROW)	Jurisdiction	General Land Use Type	Non Residential Sensitive Receptor(s)	General Character /Notable Land Uses
<b>Unit 2: Zoo Parallel (Western Heritage Way)</b>					
Crystal Springs Dr. to Griffith Park Dr.	Crystal Springs Dr.	City of Los Angeles	East: Recreational, Open Space West: Recreational, Open Space	<ul style="list-style-type: none"> <li>Los Angeles Zoo east and west of ROW</li> <li>Gene Autry Museum of Western Heritage east of ROW</li> </ul>	<ul style="list-style-type: none"> <li>ROW characterized by open space and recreational uses associated with Griffith Park</li> <li>134 Freeway and I-5 intersection and Los Angeles River NE of ROW</li> </ul>
<b>Unit 3: Griffith Park South (Crystal Springs Drive)</b>					
Griffith Park Dr. to intersection of Los Feliz Blvd. and Riverside Dr.	Crystal Springs Dr./Griffith Park Dr.	City of Los Angeles	East: Recreational, Open Space West: Recreational, Open Space, Residential	<ul style="list-style-type: none"> <li>Harding Municipal Golf Course east of ROW</li> <li>Wilson Municipal Golf Course Griffith Park Visitor Center east of ROW</li> <li>Crystal Springs Picnic Grounds east of ROW</li> <li>Griffith Park west of ROW (including playgrounds, tennis courts, merry-go-round, Cedar Tree Picnic Grounds, and pony and train rides)</li> </ul>	<ul style="list-style-type: none"> <li>ROW characterized by open space and recreational uses associated with Griffith Park</li> <li>Park Ranger Headquarters east of ROW just south of Wilson Municipal Golf Course</li> <li>I-5 Los Angeles River east of ROW</li> </ul>
<b>Unit 4: Los Feliz /Riverside to Rokeby/Rowena, Rokeby/Rowena to Rowena/West Silver Lake, and Rowena/West Silver Lake to Armstrong/West Silver Lake</b>					
Los Feliz Blvd./Riverside Dr. to Rowena Reservoir	Rowena Branch: Through Mulholland Memorial Park	City of Los Angeles	East: Residential West: Recreational, Residential	<ul style="list-style-type: none"> <li>Griffith Recreation Center NE corner of Los Feliz and Riverside</li> <li>Mulholland Memorial Park on SW corner of Los Feliz and Riverside</li> <li>Silver Lake Presbyterian Church off of Hyperion and Ettrick St. across from Rowena Tank Reservoir/Park</li> </ul>	<ul style="list-style-type: none"> <li>ROW characterized by recreational uses associated with Griffith Park, and residential neighborhoods as the Rowena Branch approaches the Rowena Reservoir and associated park (not open to public)</li> <li>Residential streets are narrow with single-family residences</li> </ul>
Los Feliz Blvd./Riverside Dr. to Rokeby/Rowena	Riverside Dr., Glendale Blvd, Rokeby St.	City of Los Angeles	Northeast: Recreation Southwest: Recreational, Residential, Commercial	<ul style="list-style-type: none"> <li>Griffith Recreation Center NE corner of Los Feliz and Riverside</li> <li>Mulholland Memorial Park on SW corner of Los Feliz and Riverside</li> </ul>	<ul style="list-style-type: none"> <li>ROW characterized by recreational uses and residential neighborhoods with some low density commercial uses</li> <li>Along Rowena, Rokeby, W. Silver Lake, and Armstrong ROW predominantly characterized by residential neighborhoods with narrow streets</li> </ul>
Rokeby St. to Armstrong Ave.	Rowena Ave., W. Silver Lake Dr., Armstrong Ave.	City of Los Angeles	North: Low density commercial, Residential South: Residential	<ul style="list-style-type: none"> <li>Ivanhoe Elementary School north of Rowena Avenue at W. Silver Lake Dr.</li> <li>Country Villa Los Feliz Health Center west of ROW at corner of Hyperion Ave.</li> </ul>	<ul style="list-style-type: none"> <li>Fire station located at the NE corner of Glendale Blvd. and Rokeby St.</li> </ul>

Location	Street (ROW)	Jurisdiction	General Land Use Type	Non Residential Sensitive Receptor(s)	General Character /Notable Land Uses
Rokeby St. to Fletcher Ave.	Fletcher Pump Station Branch Line: Rowena Ave.	City of Los Angeles	North: Low Density Commercial, Residential South: Residential	----	

**b. Would the project 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?**

*LESS-THAN-SIGNIFICANT IMPACT.* The proposed project would traverse the City of Los Angeles and the City of Burbank. Within the City of Los Angeles, the proposed project would cross the communities of North Hollywood, Tuluca Lake, Hollywood, and Griffith Park. As such, the proposed project would be subject to land use polices identified in the following plans:

- City of Burbank General Plan
- City of Burbank Media District Specific Plan
- City of Los Angeles General Plan
- City of Los Angeles Municipal Code
- North Hollywood-Valley Village Community Plan
- Sherman Oaks-Studio City-Tuluca Lake-Cahuenga Pass Community Plan
- Hollywood Community Plan
- Silver Lake – Echo Park Community Plan
- Los Angeles River Revitalization Plan
- Griffith Park Master Plan (including the Valley Gateway Plan, Zoo Gateway Plan, Resource Management Plan, and Park Improvement Strategy)

Relevant land use policies were reviewed to determine the project’s consistency with existing requirements. While the project has the potential to impact other resource areas, construction would be carried out consistent with existing plans, policies and regulations. The general intent of these plans is to protect and enhance existing communities. The proposed project would provide a necessary and scarce resource to the Los Angeles area and is consistent with the local agency’s mission to guide development and direct resource use to the greatest possible benefit of their residents. As noted above, the proposed project would have less-than-significant impacts on the communities surrounding the pipeline alignment. While the proposed project does not create any significant policy conflicts, these less-than-significant impacts represent less-than-significant policy inconsistencies because the intent of the existing policies is to protect and enhance communities.

Operation of the pipeline would also be consistent with existing plans and policies because it would be constructed underground and, thus, its use would not conflict with existing land uses. The proposed project is expected to have no operational impacts resulting from conflict with applicable existing plans and policies. Overall, the proposed project would have less-than-significant impacts.

**c. Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?**

*NO IMPACT.* The proposed project would not conflict with any applicable habitat conservation plans or natural community conservation plans because no such plans cover the proposed project alignment or immediate surrounding area. Therefore, no impacts would occur under this criterion. For more information on biological resources, please refer to Section 3.4.

### 3.10 Mineral Resources

#### MINERAL RESOURCES - Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**a. Would the project result in the loss of availability of a known mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the State?**

**NO IMPACT.** The California Geologic Survey (previously known as the California Division of Mines and Geology) has classified *urbanizing lands* according to the presence or absence of significant sand, gravel, or stone deposits that are suitable as sources of aggregates. These areas are called Mineral Resources Zones (MRZ). The classification system is intended to ensure that through appropriate lead agency policies and procedures, mineral deposits of statewide or regional significance are considered in agency decisions.

The MRZ-2 Mineral Resource Zone classification includes those areas where adequate information indicates that significant mineral deposits are present, or there is a high likelihood for their presence and development should be controlled. According to Russel Miller of the California Geologic Survey, the proposed project alignment would not be located in a mineral resource zone designated as MRZ-2 (CGS, 2004). Therefore, impacts to a known mineral resource that would be of value to the region and its residents would not occur.

**b. Would the project 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?**

**NO IMPACT.** The proposed project is not located in an area designated as containing locally important mineral resources (City of Los Angeles, 2001). Therefore, construction and operation of the proposed project would not result in the loss of availability of a locally important mineral resource recovery site. No impact would occur.

### 3.11 Noise

#### NOISE - Would the project result in:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



**a. 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?**

The majority of the project (all units, except a portion of Unit 7) would be located within the City of Los Angeles and is subject to the noise policies and standards of the City’s General Plan and noise ordinances. Section 41.40 of the Los Angeles Municipal Code indicates that no construction or repair work shall be performed between the hours of 9:00 p.m. and 7:00 a.m. of the following day, because such activities would generate loud noises and disturb persons occupying sleeping quarters in any adjacent dwelling, hotel, apartment, or other place of residence. In addition, no person, other than an individual homeowner engaged in the repair or construction of his single-family dwelling, shall perform any construction or repair work of any kind within 500 feet of residential buildings before 8:00 a.m. or after 6:00 p.m. on any Saturday, national holiday, or at any time on Sunday.

Section 112.05 of the Los Angeles Municipal Code specifies the maximum noise level for powered equipment or powered hand tools. It states that any powered equipment or powered hand tool that produces a maximum noise level exceeding 75 dBA at a distance of 50 feet from construction or industrial machinery 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 shall be prohibited. However, the above noise limitation shall not apply where compliance is technically infeasible. Technically infeasible means that the above noise limitation cannot be complied with despite the use of mufflers, shields, sound barriers, and/or any other noise reduction device or techniques during the operation of equipment.

Unit 7 of the new pipeline would be located within the City of Burbank. Section 21-209 of the City of Burbank Municipal Code states that construction is not permitted to occur at nighttime (i.e., between 10:00 p.m. and 7:00 a.m.) within a residential zone of the City, or within a radius of 500 feet from any residential zone, as to cause discomfort or annoyance to any reasonable person of normal sensitiveness that resides within the affected residential zone (City of Burbank, 1998).

**Construction Impacts**

*POTENTIALLY SIGNFICANT IMPACT.* Construction noise would be created from on-site and off-site sources. Construction activity would generally occur between 7:00 a.m. and 6:00 p.m. Monday through Friday and 8:00 a.m. to 5:00 p.m. on Saturday. However, within Griffith Park along portions of Crystal Springs Drive, construction activities would occur up to 24-hours per day. On-site noise during construction would occur primarily from heavy-duty diesel and gasoline-powered construction equipment. Off-site noise would be generated from trucks delivering materials and equipment to the job-sites, as well as from vehicles used by workers commuting to and from the job sites.

**On-site Sources.** Short-term adverse noise levels would result from the construction of the new pipeline. On-site sources would include the operation of heavy construction equipment during activities such as open trenching, jacking, and tunneling. Based on the proposed construction schedule, up to four pipeline units would be constructed concurrently. Table 3.11-1 presents the typical noise levels that would be produced by most of the heavy equipment required to construct the new pipeline. Generally, noise levels adjacent to the active construction areas can be expected to range from 75 to 90 dBA, depending on the distance the receptor is from the source of noise.

**Table 3.11-1. Noise Emission Characteristics of Construction Equipment**

Type of Equipment	Typical Noise Level, dBA at 50 feet
Backhoe	80
Compactor	82
Crane, Mobile	83
Excavator/Shovel	82
Loader	85
Paver	89
Truck	88

Source: FTA, 1995.

---

Within and immediately adjacent to residential zones, construction noise levels would likely violate Section 112.05 of the Los Angeles Municipal Code, resulting in potentially significant impacts. Nighttime construction activity along the southern portion of Unit 3 (Crystal Springs Drive) would likely violate Section 41.40 of the Los Angeles Municipal Code, potentially resulting in significant impacts to residences in the area. In addition, nighttime construction activities in Griffith Park could potentially result in short-term significant impacts to sensitive nighttime uses at the park.

The actual magnitude of construction noise impacts would depend on the type of construction activity, the noise level generated by various pieces of construction equipment, the duration of the activity, the distance between the activity and the sensitive noise receptors, and whether local barriers and topography provide shielding effects.

Land uses along the proposed pipeline route are primarily residential, commercial, recreational, and open space. During construction, residences in the vicinity of construction activities would be exposed to potentially significant noise levels generated by heavy construction equipment operating within the construction zones. The majority of the pipeline would be constructed at a maximum rate of 80 feet per day (open trench excavation). Any one receptor adjacent to an open trench construction area could experience adverse noise levels for approximately one week. Receptors adjacent to jacking or tunneling construction zones could be exposed to adverse noise levels for several weeks. Those receptors near the NHPS would be exposed to adverse noise levels for several months during the construction of the inlet structure.

Due to the potential noise impacts associated with the construction of the proposed project, this issue will be evaluated in greater detail in the EIR. The evaluation will analyze potential noise impacts on the sensitive receptors and residential uses in the project area that could be adversely impacted.

**Off-site Sources.** Noise levels from off-site construction related traffic (delivery trucks, automobiles, and haul trucks) would be potentially adverse (approximately 70 dBA to 80 dBA at 50 feet). Travel in residential neighborhoods, particularly during nighttime hours, could result in potentially significant short-term noise impacts. Offsite construction noise sources will be evaluated in greater detail in the EIR.

### **Operational Impacts**

*NO IMPACT.* In general, the proposed project would generate a very limited amount of long-term noise. The new inlet structure would generally be constructed within the existing NHPS, except for the portion that would connect the inlet structure to the new Upper Reach of the RSC pipeline, which would be located underground and adjacent to the NHPS. From the inlet structure, the new pipeline would flow via gravity requiring no new pumps. The noise sources from normal operations of the proposed project would include annual valve inspection and maintenance activities performed by LADWP's water crews. These activities would be infrequent and temporary. No noise related impacts would occur from operations of the proposed project.

- b. *Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?***

*POTENTIALLY SIGNIFICANT IMPACT.* Groundborne vibration is measured in terms of the velocity of the vibration oscillations. As with noise, a logarithmic decibel scale (VdB) is used to quantify vibration intensity. When groundborne vibration exceeds 75 to 80 VdB, it is usually perceived as annoying to building occupants. The degree of annoyance is dependent upon type of land use, individual sensitivity to vibration, and the frequency of the vibration events. Typically, vibration levels must exceed 100 VdB before building damage occurs.

Construction of the proposed project would not involve pile-driving activities; as a result, although construction of the proposed project would include heavy equipment, it is unlikely that construction

---

would result in perceptible, let alone excessive, groundborne vibration or groundborne noise levels. However, impacts from groundborne vibration and noise will be evaluated further in the EIR.

General operation of the proposed project would be passive (underground or inside the NHPS) and would not cause substantial groundborne vibration or noise levels. Groundborne noise or vibration impacts would be less than significant.

- c. Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?***

***LESS-THAN-SIGNIFICANT IMPACT.*** The proposed pipeline would operate underground, and the inlet structure would be contained within the NHPS and underground; therefore, no substantial permanent increase in ambient noise levels would occur in these areas. However, the proposed regulator station could potentially cause a localized increase in ambient noise levels. This increase in ambient noise levels would occur only when the regulator station is operational, which is expected to be infrequent. Additionally, the regulator station would be located in an underground vault within the Headworks Spreading Grounds site. As such, the increase in ambient noise levels would be not be substantial, as the placement of the station in an underground vault would substantially reduce noise levels, and due to the proposed location it would not affect sensitive receptors. Therefore, less-than-significant impacts to ambient noise levels would occur as a result of the proposed project.

- d. 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?***

***POTENTIALLY SIGNIFICANT IMPACT.*** Construction-related activities would temporarily elevate noise levels in the vicinity of the project sites [see Section 3.11(a), above]. Due to the potential increase in noise levels associated with the construction of the project, impacts would be assessed in greater detail in the EIR to determine the degree of significance, and identify appropriate mitigation measures, as necessary.

- 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?***

***NO IMPACT.*** NHPS (northernmost portion of pipeline alignment) is located approximately one mile west of the Bob Hope Airport, approximately 4.5 miles south-southeast of Whiteman Airport in Pacoima, and approximately six miles east of the Van Nuys Airport. However, the proposed project would not expose people residing or working in the project area to excessive noise levels associated with airport operations. No impacts would occur.

- 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?***

***NO IMPACT.*** The proposed pipeline would not be within the vicinity of a private airstrip and it would not expose people residing or working in the project area to excessive airport noise levels. No impacts would occur.

## 3.12 Population and Housing

### POPULATION AND HOUSING - Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and business) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a. *Would the project 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)?*

**NO IMPACT.** The proposed RSC pipeline would be located in public street rights-of-way, LADWP property, and LADWP utility easements in the North Hollywood, Silver Lake, and Los Feliz communities (including Griffith Park) within the City of Los Angeles and within the City of Burbank. Construction activities resulting from project implementation would be short-term and temporary, as described in Table 1-3 of the Project Description.

For purposes of this analysis, U.S. Census Year 2000 data for population, housing, and employment for the City and County of Los Angeles and the City of Burbank is presented in Table 3.12-1. As shown in Table 3.12-1, the Cities of Los Angeles and Burbank contain a considerable construction workforce (81,032 persons and 3,252 persons in construction trades, respectively), with a total construction workforce within Los Angeles County alone of 202,829 workers. For the proposed project, approximately 96 personnel would be employed on the project during the peak construction period. Approximately 50 percent of the workforce would be skilled labor, and 50 percent would be unskilled labor, as discussed in the project description. It is assumed that required construction personnel would come from within Los Angeles County, and specifically within the City of Los Angeles. Therefore, construction personnel would not generate a permanent increase to population levels or result in a decrease in available housing. No construction impacts to existing or future population growth levels would occur as a result of the proposed project.

**Table 3.12-1. Year 2000 Existing Conditions Population, Housing, and Employment**

Location	Population	Housing Units		Employment	
		Total Units	Vacancy	Total Employed <sup>a</sup>	In Construction Trades
City of Burbank	100,316	42,847	Owner: 385 (0.9%) Renter: 900 (2.1%)	52,744	3,252 (6.6%)
City of Los Angeles	3,694,820	1,337,706	Owner: 24,079 (1.8%) Renter: 46,820 (3.5%)	1,532,074	81,032 (5.3%)
County of Los Angeles	9,519,338	3,270,909	Owner: 52,335 (1.6%) Renter: 107,940 (3.3%)	3,953,415	202,829 (5.1%)

Source: U.S. Census Bureau, 2004.

Note(s): a. Accounts for population greater than 16 years of age and in Labor Force.

Upon completion, the RSC pipeline and inlet structure would be unmanned, requiring only periodic maintenance, and would therefore not require additional employees for operation. Furthermore, the proposed project does not involve the construction of any new residential housing units. As such, implementation of the proposed project would not generate a direct increase in the permanent population of the area or cumulatively exceed official regional or local population projections. The purpose of the proposed project includes replacing the existing deteriorated piping, and ensuring that the water distribution system has adequate system pressure and capabilities to handle system demands.

While the project is intended to meet water needs generated by residential and business uses, the proposed project would not induce population growth either directly or indirectly. Thus, no impacts associated with induced population growth would occur.

**b. Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?**

*NO IMPACT.* No residential properties exist within the proposed project pipeline route right-of-way. No housing or persons would be displaced by the project. Therefore, implementation of the proposed project would not result in the displacement of any housing, including affordable housing, nor would it necessitate the construction of replacement housing. No impacts would occur.

**c. Would the project displace substantial numbers of people necessitating the construction of replacement housing elsewhere?**

*NO IMPACT.* As stated in Section 3.12(b), above, there is no existing housing within the proposed pipeline route right-of-way. Therefore, the proposed project would not result in the displacement of people, nor would it necessitate the construction of replacement housing elsewhere. No impacts would occur.

### 3.13 Public Services

#### PUBLIC SERVICES

	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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**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?**

*NO IMPACT.* Within the City of Los Angeles, the Los Angeles Fire Department (LAFD) provides fire prevention and suppression services and emergency medical services. Within the City of Burbank, the City of Burbank Fire Department (Burbank FD) provides fire prevention and suppression services and emergency medical services. The LAFD has a total of 1,035 uniformed firefighters per rotating 24-hour shift (including 175 employees serving as firefighter/paramedics), at 103 neighborhood fire stations located strategically across the LAFD's 470 square-mile jurisdiction (LAFD, 2004). Equipment includes engines, trucks, paramedic engines, crash units, hazardous materials response and decontamination units, foam carriers, rescue ambulances, helicopters, and boats. The Burbank FD has 145 employees and operates six engine companies, including one that is paramedic equipped and staffed, two ladder truck companies, and three paramedic rescue ambulances

out of six strategically located fire stations (BFD, 2004). Fire Stations serving the proposed project area are summarized in Table 3.13-1.

The southern portion of the Upper Reach (Unit 7), which travels through Buena Vista Park, and the northern portion of the Lower Reach (Units 1a, 1b, 2, and a portion of Unit 3), which travels through Griffith Park, are located within portions of the City of Los Angeles Mountain Fire District and Fire Buffer Zone (City of Los Angeles, 1996b). Construction activities within such fire hazard areas would not pose a substantial fire risk as long as emergency vehicle access is maintained, since construction activities would be temporary and all pipeline welding activities would occur within construction trenches (i.e., away from flammable vegetation). Operation of the proposed project would not pose a substantial fire risk, since the pipeline would be buried and would only convey potable water under pressure.

**Table 3.13-1. Fire Stations Serving the Proposed Project Area**

RSC Pipeline Unit	Fire Station Location
Units 1a and 1b	Los Angeles Fire Department - Station 76 3111 Cahuenga Boulevard
Unit 2	Los Angeles Fire Department - Station 50 3036 Fletcher Drive
Unit 3	Los Angeles Fire Department - Station 35 1601 Hillhurst Avenue
Unit 4	Los Angeles Fire Department - Station 56 2759 Rowena Avenue
Unit 5	Los Angeles Fire Department - Station 89 7063 Laurel Canyon Boulevard
Unit 6	Los Angeles Fire Department - Station 86 4305 Vineland Avenue
Unit 7	City of Burbank Fire Department - Station 15 1420 W. Verdugo Ave.

Source: LAFD, 2004.

As indicated in Table 3.13-1, seven local LAFD and Burbank FD stations would serve the pipeline alignment. Fire protection could be required at a project construction site in the event of a construction accident. The likelihood of an accident requiring such a response would be low. Overall, project construction would not occur in areas of high fire danger; the biggest potential hazard would be fire associated with dry vegetation along the route, specifically within Units 1a, 1b, 2, 3 (northern portion), and 7 (southern portion). However, watering activities associated with dust suppression for disturbed areas would reduce the potential for this type of accident to occur. Therefore, the service capacities of local fire departments in which accidents could occur would not be adversely affected by the proposed project. Additionally, emergency access to the construction sites would be maintained during construction. Therefore, no impacts to fire protection services would occur.

**ii) Police protection?**

**NO IMPACT.** The City of Los Angeles Police Department (LAPD) provides police service to the City of Los Angeles. The City of Burbank Police Department (Burbank PD) provides police service to the City of Burbank. Police Stations serving the RSC pipeline alignment are summarized in Table 3.13-2.

**Table 3.13-2. Police Stations Serving the Propose Project Area**

<b>RSC Pipeline Unit</b>	<b>Fire Station Location</b>
Unit 1	LAPD Hollywood Community Police Station 1358 N. Wilcox Avenue
Units 2, 3, and 4	LAPD Northeast Community Police Station 3353 San Fernando Road
Units 5 and 6	LAPD North Hollywood Community Police Station 11640 Burbank Boulevard
Unit 7	City of Burbank PD 200 N. Third Street

Source: ZIMAS, 2004.

According to Officer Tanya Hanamaikai of the Crime Prevention Unit, Community Relations Section of the LAPD, the proposed RSC Project would not impact the LAPD’s ability to serve the area (LAPD, 2004). Officer Hanamaikai estimates that the service response time to each unit of the proposed alignment would be approximately 10 minutes. Because the proposed project does not include the construction of residential housing or generate the need for additional employees (refer to Section 3.12, Population and Housing), the project would not reduce the officer to population ratio, nor would the relatively limited additional demand substantially affect the provision of public police services of the LAPD or Burbank PD. The proposed project would include security features such as controlled construction access and nighttime security lighting, which would reduce the demand for police protection. Emergency police access to the construction sites would be maintained during construction, as required by the City of Los Angeles and the City of Burbank. Therefore, no impacts to police protection services would occur.

**iii) Schools?**

*NO IMPACT.* The demand for new or expanded school facilities is generally associated with an increase in housing or population. As described above and in Section 3.12, Population and Housing, the proposed project would neither induce population growth through the need for new employees nor result in new housing. Thus, the proposed project would not increase the need for new or expanded school facilities. Therefore, no impact on schools within the project vicinity would occur.

**iv) Parks?**

*NO IMPACT.* The demand for new or expanded parks is generally associated with an increase in housing or population. As described above and in Section 3.12, Population and Housing, the proposed project would neither induce population growth through the need for new employees nor result in new housing. Thus, the proposed project would not increase the need for new or expanded park facilities. Therefore, no impact on parks within the project vicinity would occur.

**v) Other public facilities?**

*NO IMPACT.* The demand for new or expanded hospital, library, power/data lines, and roadways is generally associated with an increase in housing or population. As described above and in Section 3.12, Population and Housing, the proposed project would neither induce population growth through the need for new employees nor result in new housing. Thus, the proposed project would not increase the need for new or expanded public facilities. Project implementation would not require new or altered public utilities or infrastructure services above existing conditions. No impacts would occur.

### 3.14 Recreation

#### RECREATION

	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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- 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?*

*NO IMPACT.* The increase in use of recreational facilities is generally spurred by regional population growth. As demonstrated in Section 3.12, Population and Housing, the proposed project would not induce growth, but would instead replace an existing water line to better serve an existing population in a previously developed area. Therefore, the proposed project would not induce population growth. As such, the proposed project would cause no increase in 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. *Would the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?*

*LESS-THAN-SIGNIFICANT IMPACT.* The proposed project includes a water supply pipeline, an inlet structure, and appurtenant structures necessary for the operation and maintenance of the pipeline. The proposed project would not include the construction of or induce expansion of any recreational facilities. Therefore, the proposed project would have less-than-significant impacts on recreational facilities.

### 3.15 Transportation and Traffic

#### TRANSPORTATION/TRAFFIC - Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Result in inadequate emergency access?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Result in inadequate parking capacity?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



- 
- a. ***Would the project cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?***

**POTENTIALLY SIGNIFICANT IMPACT.** The proposed project itself, upon completion, would not affect local traffic conditions. However, transportation impacts would be associated with construction activities required for the proposed RSC pipeline infrastructure. The proposed pipeline would be located in public street rights-of-way, LADWP property, and LADWP utility easements in the North Hollywood, Silver Lake, and Los Feliz communities (including Griffith Park) within the City of Los Angeles and the City of Burbank. Construction activities within public streets would require temporary closures, detours, and delineation of existing traffic lanes around the work area, resulting in traffic delays and increased traffic volumes on surrounding roadways that may significantly impact existing circulation in the area and the traffic load and capacity of the surrounding street system. The change in traffic volumes and patterns from existing conditions to future conditions with and without the proposed project construction will be determined and evaluated as part of the EIR.

- b. ***Would the project cause, either individually or cumulatively, a level-of-service standard established by the county congestion management agency for designated roads or highways to be exceeded?***

**POTENTIALLY SIGNIFICANT IMPACT.** Because construction activities associated with the proposed project would occur within public streets and require closures, detours, and delineation of existing traffic lanes around the work area, it is anticipated that the proposed project could generate traffic during construction that may significantly impact, either cumulatively or individually, levels of service established by the Los Angeles County Congestion Management Agency. The level of service of potentially impacted streets will be determined and evaluated as part of the EIR.

- c. ***Would the project 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?***

**NO IMPACT.** Although Unit 5 of the proposed project is located approximately one mile west of the Bob Hope Airport, the proposed project alignment is not located within the Airport Planning Boundary. According to the Burbank General Plan, however, part of the proposed project would be within the Airport Approach Area for Bob Hope Airport, which imposes restrictions on building heights (City of Burbank, 1988). For example, at the north end of the pipeline alignment along Lankershim Boulevard, which is the closest point on the alignment to Bob Hope Airport, construction equipment heights would be limited to approximately 50 feet without FAA approval. Per the Federal Code of Regulations, 49 CFR Part 77 (§77.15), construction would not need approval if the equipment were to be shielded by existing structures of a permanent and substantial character of equal or greater height, and would be located in the congested area of a city where it is evident beyond all reasonable doubt that the equipment would not adversely affect safety in air navigation. LADWP would obtain FAA approval as necessary to meet the height limitations specified. Therefore, construction of the proposed project would not affect airport activities during construction.

Operation of the proposed project would occur underground and within existing structures (NHPS), therefore building height restrictions would not be exceeded. The proposed project does not propose any uses that would change air traffic patterns or generate air traffic. As such, safety risks associated with a change in air traffic patterns would not occur.

- d. ***Would the project substantially increase hazards because of a design feature or incompatible uses?***

**POTENTIALLY SIGNIFICANT IMPACT.** The proposed project could result in increased conflicts between automobile traffic, buses, and pedestrians. Although design features such as sharp curves or other hazardous conditions do not exist in the area, the increased traffic levels in the immediate vicinity of the route during construction, in addition to the increased number of vehicular turning movements resulting from detours, could result in greater potential for traffic accidents to occur.

Furthermore, the increase in traffic levels during construction could conflict with existing pedestrian activity along commercial corridors and through Griffith Park. The EIR will include a pedestrian survey and an analysis of potential areas of risk to pedestrians and others. Traffic and pedestrian safety issues will be examined further in the traffic study to be prepared as part of the EIR.

**e. Would the project result in inadequate emergency access?**

**POTENTIALLY SIGNIFICANT IMPACT.** Emergency access to the construction route would be maintained during construction. However, the majority of project construction and staging would be within existing roadways and could interfere with access and movement of emergency vehicles to surrounding properties. The EIR will consider mitigation measures, such as coordination with appropriate permitting agencies and the maintenance of adequate emergency vehicle access, to reduce impacts.

**f. Would the project result in inadequate parking capacity?**

**POTENTIALLY SIGNIFICANT IMPACT.** Temporary closures, detours, and delineation of existing traffic lanes along the proposed project route could result in the temporary elimination of existing street parking and access to existing off-street parking facilities during project construction. Therefore, the EIR will include an analysis of potential impacts to existing street parking and off-street parking facilities as a result of proposed project construction activities.

**g. Would the project conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?**

**POTENTIALLY SIGNIFICANT IMPACT.** Temporary closures, detours, and delineation of existing traffic lanes along the proposed project route could result in the temporary elimination of existing public bus, bicycle, or equestrian facilities during project construction. The proposed project route is accessible and serves various Metropolitan Transportation Authority (MTA) bus lines within the City of Los Angeles and the City of Burbank. Bicycle lanes and locking racks may exist along the route and could be impacted by potential traffic lane and sidewalk closures required during project construction. Equestrian trails, specifically in the vicinity of Buena Vista Park, could also be temporarily closed due to project construction. Therefore, the proposed project could have an adverse effect on policies supporting the use of alternative transportation. The EIR will include an analysis of potential impacts to alternative transportation facilities as a result of the proposed project.

### 3.16 Utilities and Service Systems

<b>UTILITIES AND SERVICE SYSTEMS - Would the project:</b>				
	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Result in a determination by the wastewater treatment provider, which serves or may serve the project determined that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**UTILITIES AND SERVICE SYSTEMS - Would the project:**

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?**

*LESS-THAN-SIGNIFICANT IMPACT.* The sanitary sewer system that serves the area of the proposed project route is operated under the jurisdiction of the City of Los Angeles Department of Public Works, Bureau of Sanitation. The City's wastewater collection system includes over 6,500 miles of major interceptor and mainline sewers, five central outfall sewers, eight maintenance yards, and 55 pumping plants. The Hyperion Treatment Plant (HTP) provides the majority of the City's wastewater treatment needs. The current Year 2003 daily average dry weather flow capacity of the HTP is 450 million gallons per day (mgd). As of April 2002, HTP treated an average dry weather flow of approximately 331 mgd. Wastewater collected in the proposed project area is conveyed to the HTP by major interceptor sewers that are fed by smaller collector systems that extend throughout the area.

During construction, the amount of wastewater generated by construction workers, including possible releases of hydrostatic test water, if approved, into the Los Angeles City sanitary sewer, would be considered a short-term minimal impact and would not result in a permanent increase to the treatment plant that receives the wastewater. Therefore, construction impacts to wastewater treatment would be less than significant.

Upon completion of the proposed RSC pipeline and inlet structure, no further wastewater generation would occur. Therefore, because the wastewater flows associated with operation of the proposed project would not introduce any new wastewater to any treatment plants daily capacity, the proposed project would be within the requirements of the Los Angeles Regional Water Quality Control Board and would result in no impacts to wastewater treatment providers.

**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?**

*LESS-THAN-SIGNIFICANT IMPACT.* As stated above in Section 3.16(a), the existing wastewater treatment facilities serving the RSC pipeline alignment would be adequate to provide wastewater services during construction and operation of the proposed project.

LADWP is responsible for supplying, conserving, treating, and distributing water for the City of Los Angeles, including the proposed project route. The LADWP obtains water from wells in the local groundwater basin and the Los Angeles Aqueduct System, purchases water from the Metropolitan Water District of Southern California, and also receives recycled water from treatment and reclamation plants.

The proposed project may require water during site grading for dust suppression purposes. Due to the short-term nature of construction, the water consumed would be considered less than significant and would not impact the local water supply. Operation of the RSC pipeline and inlet structure would not result in increased potable water use. Therefore, water consumption associated with the proposed project would not require or result in the construction of new water treatment facilities or the expansion of existing facilities.

- 
- 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?***

*LESS-THAN-SIGNIFICANT IMPACT.* Project construction would require trenching and excavation activities within local streets that contain stormwater drainage facilities. These disruptions would be considered short-term and temporary. Upon completion of each segment of RSC pipeline, replacement (as needed) of any existing on-site storm drains would occur as part of the construction activities. During construction, catch basins and storm drain piping would be relocated to maintain existing drainage. Therefore, because existing drainage patterns would not be altered, and any existing stormwater infrastructure that may be removed during construction would be replaced, less-than-significant impacts to stormwater drainage facilities would occur.

- d. ***Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?***

*NO IMPACT.* As stated above in Section 3.16(a) and (b), the existing water and wastewater treatment facilities serving the RSC pipeline alignment are anticipated to be adequate to provide wastewater, domestic potable water service, and fire flows for the area. No impacts would occur.

- 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?***

*NO IMPACT.* As stated above in 3.16(a), the existing wastewater treatment facilities serving the RSC pipeline alignment are anticipated to continue to provide wastewater services for the area. The proposed project would not require the construction of new wastewater treatment facilities or the expansion of existing facilities. Therefore, no impacts to wastewater treatment providers are anticipated.

- f. ***Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?***

*LESS-THAN-SIGNIFICANT IMPACT.* Within the City of Los Angeles, solid waste management, including collection and disposal services and landfill operation, is administered by various public agencies and private companies. Table 3.16-1 indicates the landfill facility that would likely serve the proposed project area and the most recent permitted disposal, daily disposal, remaining capacity, and permit status. In addition, four unclassified (inert waste) landfills in Los Angeles County are permitted to accept inert waste and construction/demolition debris. The most recent permitted disposal capacity, daily disposal rates, remaining capacity, and permit status for the unclassified landfills serving the proposed project area are also shown in Table 3.16-1.

The proposed project would generate demolition and construction debris during project construction, primarily in the form of soil spoils. Spoils from cuts, including cuts in streets, would typically be used as backfill materials at the site of origin. Materials unsuitable for backfill use and economically not usable for other purposes would be disposed of in accordance with local and county guidelines in available landfills. Because the amount of backfill is unknown at this time, estimates of the total tons per day of solid waste debris from demolition activities associated with the proposed project are unavailable. During construction, recycling and on-site re-use of construction materials would occur when possible. Table 3.16-1 lists the four unclassified landfills likely to be used for disposal of demolition and construction debris.

**Table 3.16-1. Existing Landfills Available to the Project Site**

Name	Location	Permitted Daily Disposal (Tons)	Average Daily Disposal (Tons)	Remaining Capacity (Million Tons)	Permit Expiration Date
Sunshine Canyon (Class III)	Sylmar	12,100	3,481	90.0	2027
Azuza Land and Reclamation (Unclassified)	Azuza	6,500	500	48.93	Project Completion
Nu-Way Live Oak (Unclassified)	Irwindale	6,000	1,834	N/A	Project Completion
Peck Road Gravel Pit (Unclassified)	Monrovia	1,210	990	2.38	Project Completion
Reliance Pit No. 2 (Unclassified)	Irwindale	6,000	2,233	N/A	Project Completion

Sources: California Integrated Waste Management Board, California Waste Facilities, Sites, & Operations Database, downloaded July 13, 2000 and February 19, 2002 from <http://www.ciwmb.ca.gov/SWIS/>; California Integrated Waste Management Board, Permitting and Enforcement Committee, Agenda Item 3, March 19, 1998; Williams, Timothy, Board of Supervisors OKs Expansion of Chiquita Canyon Landfill, Los Angeles Times, February 26, 1997; City of Los Angeles, Draft Subsequent Environmental Impact Report Sunshine Canyon Landfill, SEIR 91-0377-ZC/GPA, SCH No. 92041053.

The known total permitted daily disposal at the four identified unclassified landfills is 19,710 tons and the actual daily disposal is 5,557 tons, which yields a remaining total permitted capacity of 14,153 tons per day (The remaining daily permitted capacity is the average daily disposal subtracted from the permitted daily disposal.). While the project would increase solid waste generation as a result of demolition activities, it is not anticipated that the tons per day of solid waste generated would account for a significant percent of the total combined remaining daily permitted capacity. Therefore, waste generated by demolition and construction activities would not exceed the available capacity at the unclassified landfills serving the project area that would likely accept construction and demolition debris generated by the proposed project. Additionally, recycling and on-site re-use of construction materials would further minimize the amount of construction solid waste generation. Construction solid waste impacts would be short-term and less than significant.

Upon completion of the proposed RSC pipeline and inlet structure, no permanent increase in solid waste generation would occur. The proposed project would be an unmanned water pipeline facility and would not require any additional staff to oversee facility operations. Therefore, solid waste associated with operation of the proposed project would not introduce any increase in solid waste generation to the Sunshine Canyon landfill facility serving the project area. No impacts would occur.

**g. Comply with federal, state, and local statutes and regulations related to solid waste?**

**NO IMPACT.** As stated above in 3.16(f), existing solid waste facilities serving the proposed project area are anticipated to continue to provide solid waste services in compliance with existing federal, state, and local statutes and regulations related to solid waste. The LADWP complies with all applicable laws and regulations related to solid waste generation, collection, and disposal in the County of Los Angeles. The proposed project would result in a short-term and temporary increase in solid waste generation during project construction, but would not, directly or indirectly, affect standard solid waste operations of the facility, which inherently is in compliance with applicable regulations. Upon completion of the proposed RSC pipeline and inlet structure, no permanent increase in solid waste generation would occur. The proposed project would be an unmanned facility and would not require any additional staff to oversee facility operations. Therefore, solid waste associated with operation of the proposed project would not introduce any increase in solid waste generation to the landfill facilities serving the project area. Recycling activities during project construction would ensure that the proposed project would be in compliance with the California Integrated Waste Management Act of 1989 (AB 939), the County of Los Angeles Source Reduction and Recycling

Element, and the County of Los Angeles Countywide Integrated Waste Management Plan as described above. No impacts related to applicable solid waste regulations would occur.

### 3.17 Mandatory Findings of Significance

#### MANDATORY FINDINGS OF SIGNIFICANCE

	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Does the project have environmental effects, which would cause substantial adverse effects on human beings, either directly or indirectly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**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?**

**LESS-THAN-SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED.** The preceding Biological Resources analysis (Section 3.4) does not reveal any significant unmitigable impacts to the habitat of fish or wildlife species. Based on these findings, the proposed project is not expected to degrade the quality of these environments. The majority of the proposed pipeline route is covered in impervious surfaces in the form of existing roadways. These areas contain limited landscaping, which does not typically support sensitive species. As presented in Section 3.4, Biological Resources, there are no special status plants or wildlife species observed to occur within, or that have been located within, 500 feet of the construction footprint of the proposed project alignment. However, the project alignment would traverse residential, park and open space areas that support native and nonnative trees and shrubs that provide habitat to birds protected under the Migratory Bird Treaty Act. This is particularly the case in Units 1a, 1b, 2 and 3. In addition there are wildlife populations in Griffith Park that move freely between natural and recreational areas. In addition, the proposed project alignment may directly eliminate or indirectly impact mature native oak trees greater than 8 inches diameter that are covered by the City of Los Angeles Tree Protection Ordinance, Sec. 46.00 of the Municipal Code. As outlined in Section 3.4, Biological Resources, Mitigation Measures BIO-1 through BIO-9 are presented to reduce construction disturbances associated with the proposed project on plant and wildlife habitat to a less-than-significant level. Therefore, the proposed project is not expected to have the potential to substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal.

As discussed in Section 3.5, Cultural Resources, the proposed project alignment travels through areas considered to be sensitive to cultural resources. Historical record searches and field reconnaissance have resulted in the identification of standing structures of historic significance or buried resources (e.g., refuse concentrations or evidence of habitation) along the proposed alignment. Therefore,

---

although no resources have been specifically identified within the proposed project alignment, construction would require a considerable amount of excavation and have the potential to uncover additional cultural and paleontological resources. To reduce impacts associated with the potential disturbance of cultural resources to a less-than-significant level, Mitigation Measures CUL-1 through CUL-5 are proposed and shall be implemented. The inclusion of these mitigation measures would ensure that any potential impacts to important examples of the major periods of California history or prehistory would be less than significant.

- 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.)***

***POTENTIALLY SIGNIFICANT IMPACT.*** All environmental issue areas were considered as part of this Initial Study. Of the seventeen issue areas, only three are expected to be significant and will be evaluated further in the EIR. All other issue areas were identified as having no impacts, less-than-significant impacts, or less-than-significant impacts with mitigation incorporated.

As discussed in Section 3.3, Air Quality, Section 3.11, Noise, and Section 3.15, Transportation/Traffic, the proposed project could potentially result in significant cumulative impacts to air quality, noise, and traffic. Further analysis of these issues is recommended as part of the environmental review process.

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

***POTENTIALLY SIGNIFICANT IMPACT.*** All environmental issue areas were considered as part of this Initial Study. Of the seventeen issue areas, only three are expected to be significant and will be evaluated further in the EIR. All other issue areas were identified as having no impacts, less-than-significant impacts, or less-than-significant impacts with mitigation incorporated.

As discussed in Section 3.3, Air Quality, Section 3.11, Noise, and Section 3.15, Transportation/Traffic, the proposed project could have environmental effects, which could cause direct or indirect substantial adverse effects on human beings. Further analysis of these issues is recommended as part of the environmental review process.

---

## 4. References

---

- BFD (Burbank Fire Department). 2004. Website (<http://www.burbankfire.us/operations.htm>) accessed May.
- CDFG (California Department of Fish and Game). 2004. California Natural Diversity Database (CNDDDB) results for the Burbank, Hollywood and Los Angeles quads.
- City of Burbank. 1998. Section 21-209 of the Burbank Municipal Code. Available online at: <http://www.burbank.acityline.com/city/depts/planning/c21a2.htm#specialnoise>.
- \_\_\_\_\_. 1988. Land Use Element of the City of Burbank General Plan.
- City of Los Angeles. 2001. Conservation Element of the City of Los Angeles General Plan. Accessed website <<http://cityplanning.lacity.org/>> . May 24, 2004.
- \_\_\_\_\_. 1996a. Safety Element of the Los Angeles City General Plan. November.
- \_\_\_\_\_. 1996b. Safety Element of the Los Angeles City General Plan. "Exhibit D: Selected Wildfire Hazard Areas in the City of Los Angeles." April.
- CGS (California Geologic Survey). 2004. Personal communication between Tatiana Inouye of Aspen Environmental Group and Russel Miller of the California Geologic Survey. 213-239-0878. May 24.
- \_\_\_\_\_. 2001. Seismic Hazard Zone Report for the Van Nuys 7.5-Minute Quadrangle, Los Angeles County, California.
- \_\_\_\_\_. 1999. Seismic Hazard Zones Map, Burbank Quadrangle.
- \_\_\_\_\_. 1998. Seismic Hazard Evaluation of the Burbank 7.5-Minute Quadrangle, and Seismic Hazard Zones Map, Van Nuys Quadrangle, Los Angeles County, California.
- DOC (California Department of Conservation). 2004a. Personal communication between Patrick Hennessy and Kathleen Robertson of Aspen Environmental Group. May 17.
- \_\_\_\_\_. 2004b. Personal communication between Jim Nordstrom and Kathleen Robertson of Aspen Environmental Group. May 17.
- Dolan, J.F., Stevens, D., and Rockwell, T.K. 2000. Paleoseismologic evidence for an early to mid-Holocene age of the most recent surface rupture on the Hollywood fault, Los Angeles, California. Bulletin of the Seismological Society of America, Volume 90, pages 334-344.
- EDR (Environmental Data Resources, Inc.). 2004. EDR DataMap™ and Environmental Atlas™ for the River Supply Conduit Project, Los Angeles, CA. Inquiry Number 01191140.1r. Prepared May 19.
- FTA (Federal Transit Administration). 1995. Transit Noise and Vibration Impact Assessment, Final Report, April.
- LAFD (City of Los Angeles Fire Department). 2004. Website (<http://www.lafd.org>) accessed May 25.



- 
- LAPD (City of Los Angeles Police Department). 2004. Telephone conversation with Officer Tanya Hanamaikai, Crime Prevention Unit, Community Relations Section, May 26.
- LARWQCB (Los Angeles Regional Water Quality Control Board). 2004. Los Angeles River Watershed Summary. Website accessed June 4.  
[http://www.swrcb.ca.gov/%7Erwqcb4/html/programs/regional\\_program/wmi/LOS%20ANGES%20RIVER%20WATERSHED.pdf](http://www.swrcb.ca.gov/%7Erwqcb4/html/programs/regional_program/wmi/LOS%20ANGES%20RIVER%20WATERSHED.pdf).
- McKenna, 2004. Personal communication between Sandra Alarcón-Lopez of Aspen Environmental Group Inc. and Jeanette McKenna of McKenna et al. April 15.
- McKenna et al. 2004. "Results of a Phase I Cultural Resources Investigation of the Proposed Los Angeles Department of Water and Power River Supply Conduit, Los Angeles County, California. Prepared for Aspen Environmental Group. Job No. 03-04-06-918. June 20.
- SCAQMD (South Coast Air Quality Management District). 2001. Personal communication between Matt Fagundes of Aspen Environmental Group and Steve Smith of the SCAQMD, May 23.
- \_\_\_\_\_. 1993. CEQA Air Quality Handbook.
- Thomas Brothers Guide. 2003. Los Angeles County Street Guide.
- U.S. Census Bureau. 2004. "US Census 2000: General Characteristics Population and Housing. Accessed May. <http://factfinder.census.gov/servlet/BasicFactsServlet>.
- USDA (U.S. Department of Agriculture, Bureau of Soils). 1917. Soil Survey of the San Fernando Valley Area, California. 61 p.
- USGS (United States Geological Survey). 1995. Groundwater Atlas of the United States. [http://capp.water.usgs.gov/gwa/ch\\_b/index.html](http://capp.water.usgs.gov/gwa/ch_b/index.html). Website accessed June 4.
- WWF (World Wildlife Fund). 2004. Website: ([http://www.worldwildlife.org/wildworld/profiles/terrestrial/na/na1201\\_full.html](http://www.worldwildlife.org/wildworld/profiles/terrestrial/na/na1201_full.html)) accessed June.
- ZIMAS (Zone Information and Map Access System). 2004. City of Los Angeles, Department of City Planning. Online website: <http://plngis.lacity.org/>. Accessed June 1.

## 5. Report Preparation

**Table 5-1. List of Preparers and Reviewers**

<b>Name/Organization</b>	<b>Project Role</b>
<b>Los Angeles Department of Water and Power</b>	
Anselmo Collins	Project Manager
Charles Holloway	Supervisor of Environmental Assessment
Sarah Easley	Environmental Program Manager
<b>Aspen Environmental Group</b>	
Sandra Alarcón-Lopez	Task Order Manager
George Hampton	Previous Task Order Manager
Lisa Blewitt	Deputy Project Manager, Project Description, Cultural Resources, Hazardous Materials
Scott Debauche	Population and Housing, Public Services, Traffic and Transportation, Utilities and Service Systems
Matt Fagundes	Air Quality, Noise
Shari Koslowsky	Biological Resources
Carolina Morgan	Permits, Mineral Resources, Hydrology and Water Quality
Tatiana Inouye	Mineral Resources
Kathleen Robertson	Aesthetics, Agricultural Resources, Recreation, Land Use and Planning
Negar Vahidi	Land Use and Planning
William Walters	Air Quality
<b>Geotechnical Consultants, Inc.</b>	
Aurie C. Patterson, R.G.	Geology and Soils
<b>McKenna et al.</b>	
Jeanette McKenna	Phase I Cultural Resources Survey

**INTENTIONALLY LEFT BLANK**

---

**APPENDIX A.3**  
**COMMENT LETTERS**

---

**INTENTIONALLY LEFT BLANK**

## A.3. Comment Letters

---

The LADWP solicited input from other agencies on the proposed project through the distribution of a Notice of Preparation (NOP). The LADWP filed the NOP and the Initial Study with the State Clearinghouse in the Office of Planning and Research as an indication that an EIR would be prepared. In addition, the NOP/IS was distributed to local agencies and interested parties to solicit comments on the scope and content of the environmental analysis to be included in the EIR. The public was given 30-days to respond, which ended on September 21, 2004; however, the review period was extended to October 18, 2004, to accommodate the City of Burbank. A total of twelve comment letters and emails were received from various State and local agencies during the review period, as well as one additional letter received after the close of the review period. These letters are listed in Table A.3-1, below. The actual letters and emails are provided in this section for reference. All comments have been addressed in this EIR, as appropriate.

**Table A.3-1. Listing of Comment Letter Received**

Organization	Name	Date
State of California Governor's Office of Planning and Research, State Clearinghouse and Planning Unit	Scott Morgan	August 23, 2004
California Department of Transportation (District 7)	Cheryl J. Powell	August 30, 2004
South Coast Air Quality Management District	Steve Smith	August 31, 2004
Metropolitan Transportation Authority	Susan Chapman	September 14, 2004
California Department of Fish and Game	Morgan Wehje	September 20, 2004
City of Burbank, Park, Recreation & Community Services Department	Janice G. Bartolo	September 21, 2004
City of Los Angeles, Department of Transportation	Mike Bagheri	September 24, 2004
City of Los Angeles, Department of Recreation and Parks	Kathleen Chan	October 1, 2004
Burbank Water and Power	Dev Birla	October 6, 2004
Burbank Water and Power, Water Division	Bill Mace	October 7, 2004
City of Los Angeles, Department of Recreation and Parks	David Attaway	October 13, 2004
City of Burbank, Public Works Department	Omar Moheize	October 14, 2004
City of Los Angeles, Department of Public Works	James E. Doty	January 3, 2005

**INTENTIONALLY LEFT BLANK**



Arnold  
Schwarzenegger  
Governor

STATE OF CALIFORNIA  
Governor's Office of Planning and Research  
State Clearinghouse and Planning Unit



Jan Boel  
Acting Director

Notice of Preparation

August 23, 2004

To: Reviewing Agencies  
Re: River Supply Conduit Project  
SCH# 2004081151

Attached for your review and comment is the Notice of Preparation (NOP) for the River Supply Conduit Project draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.


Please direct your comments to:

**Sarah Easley**  
**Los Angeles County Dept of Water and Power**  
**111 North Hope Street, Room 1044**  
**Los Angeles, CA 90012**

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

*for*   
Scott Morgan  
Project Analyst, State Clearinghouse

Attachments  
cc: Lead Agency



**Document Details Report  
State Clearinghouse Data Base**

**SCH#** 2004081151  
**Project Title** River Supply Conduit Project  
**Lead Agency** Los Angeles County Department of Water and Power

---

**Type** NOP Notice of Preparation  
**Description** The Los Angeles Department of Water and Power (LADWP) proposes to construct a new larger River Supply Conduit (RSC) to replace the Upper and Lower Reaches of the existing RSC pipeline in a new alignment. The route would begin at the North Hollywood Pumping Station (NPHS) and travel southeast through the Griffith Park area, and connect to the Rowena/Ivanhoe connecting line below Los Feliz Boulevard. In addition, LADWP proposes to construct a new Inlet Structure at the existing NPHS.

---

**Lead Agency Contact**

**Name** Sarah Easley  
**Agency** Los Angeles County Dept of Water and Power  
**Phone** 213-367-1276 **Fax**  
**email**  
**Address** 111 North Hope Street, Room 1044  
**City** Los Angeles **State** CA **Zip** 90012

---

**Project Location**

**County** Los Angeles  
**City** Burbank  
**Region**  
**Cross Streets** Start: Morella Ave/Vanowen Street End: Glendale Blvd/Fletcher Drive  
**Parcel No.** various  

<b>Township</b>	<b>Range</b>	<b>Section</b>	<b>Base</b>
-----------------	--------------	----------------	-------------

---

**Proximity to:**

**Highways** I-5, Hwy 101, SR 134  
**Airports** Bob Hope Airport  
**Railways**  
**Waterways** Los Angeles River, Tujunga Wash, Burbank Western Channel, Verdugo Wash  
**Schools** Los Angeles Unified School District  
**Land Use** The study area covers portions of the City of Los Angeles and the City of Burbank, Land use designations vary, and would include residential, commercial, industrial, and other land use designations.

---

**Project Issues** Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Septic System; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife; Growth Inducing; Landuse

---

**Reviewing Agencies** Resources Agency; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Game, Region 5; Department of Health Services; Native American Heritage Commission; State Lands Commission; Caltrans, District 7; Regional Water Quality Control Board, Region 4

---

**Date Received** 08/23/2004 **Start of Review** 08/23/2004 **End of Review** 09/21/2004

- Resources Agency
- Resources Agency  
Nadell Gayou
- Dept. of Boating & Waterways  
David Johnson
- California Coastal Commission  
Elizabeth A. Fuchs
- Colorado River Board  
Gerald R. Zimmerman
- Dept. of Conservation  
Roseanna Taylor
- California Energy Commission  
Environmental Office
- Dept. of Forestry & Fire Protection  
Allen Robertson
- Office of Historic Preservation  
Wayne Donaldson
- Dept of Parks & Recreation  
B. Noah Tilghman  
Environmental Stewardship Section
- Reclamation Board  
DeeDee Jones
- Santa Monica Mountains Conservancy  
Paul Edelman
- S.F. Bay Conservation & Dev't. Comm.  
Steve McAdam
- Dept. of Water Resources  
Resources Agency  
Nadell Gayou
- Fish and Game
- Dept. of Fish & Game  
Scott Flint  
Environmental Services Division
- Dept. of Fish & Game 1  
Donald Koch  
Region 1
- Dept. of Fish & Game 2  
Banky Curtis  
Region 2
- Dept. of Fish & Game 3  
Robert Floerke  
Region 3
- Dept. of Fish & Game 4  
William Laudermilk  
Region 4
- Dept. of Fish & Game 5  
Don Chadwick  
Region 5, Habitat Conservation Program
- Dept. of Fish & Game 6  
Gabrina Gatchel  
Region 6, Habitat Conservation Program
- Dept. of Fish & Game 6 I/M  
Tammy Allen  
Region 6, Inyo/Mono, Habitat Conservation Program
- Dept. of Fish & Game M  
George Isaac  
Marine Region
- Other Departments
- Food & Agriculture  
Steve Shaffer  
Dept. of Food and Agriculture
- Dept. of General Services  
Robert Sleppy  
Environmental Services Section
- Dept. of Health Services  
Wayne Hubbard  
Dept. of Health/Drinking Water
- Independent Commissions, Boards
- Delta Protection Commission  
Debbie Eddy
- Office of Emergency Services  
Dennis Castrillo
- Governor's Office of Planning & Research  
State Clearinghouse
- Native American Heritage Comm.  
Debbie Treadway

- Public Utilities Commission  
Ken Lewis
- State Lands Commission  
Jean Sarino
- Tahoe Regional Planning Agency (TRPA)  
Cherry Jacques
- Business, Trans & Housing
- Caltrans - Division of Aeronautics  
Sandy Hesnard
- Caltrans - Planning  
Terri Pencovic
- California Highway Patrol  
John Olejnik  
Office of Special Projects
- Housing & Community Development  
Lisa Nichols  
Housing Policy Division
- Dept. of Transportation
- Dept. of Transportation 1  
Mike Eagan  
District 1
- Dept. of Transportation 2  
Don Anderson  
District 2
- Dept. of Transportation 3  
Jeff Pulverman  
District 3
- Dept. of Transportation 4  
Tim Sable  
District 4
- Dept. of Transportation 5  
David Murray  
District 5
- Dept. of Transportation 6  
Marc Birnbaum  
District 6
- Dept. of Transportation 7  
Cheryl J. Powell  
District 7

- Dept. of Transportation 8  
John Pagano  
District 8
- Dept. of Transportation 9  
Gayle Rosander  
District 9
- Dept. of Transportation 10  
Tom Dumas  
District 10
- Dept. of Transportation 11  
Mario Orso  
District 11
- Dept. of Transportation 12  
Bob Joseph  
District 12
- Cal EPA
- Air Resources Board
- Airport Projects  
Jim Lerner
- Transportation Projects  
Kurt Karperos
- Industrial Projects  
Mike Tollstrup
- California Integrated Waste Management Board  
Sue O'Leary
- State Water Resources Control Board  
Jim Hockenberry  
Division of Financial Assistance
- State Water Resources Control Board  
Student Intern, 401 Water Quality Certification Unit  
Division of Water Quality
- State Water Resources Control Board  
Steven Herrera  
Division of Water Rights
- Dept. of Toxic Substances Control  
CEQA Tracking Center

- Regional Water Quality Control Board (RWQCB)
- RWQCB 1  
Cathleen Hudson  
North Coast Region (1)
- RWQCB 2  
Environmental Document Coordinator  
San Francisco Bay Region (2)
- RWQCB 3  
Central Coast Region (3)
- RWQCB 4  
Jonathan Bishop  
Los Angeles Region (4)
- RWQCB 5S  
Central Valley Region (5)
- RWQCB 5F  
Central Valley Region (5)  
Fresno Branch Office
- RWQCB 5R  
Central Valley Region (5)  
Redding Branch Office
- RWQCB 6  
Lahontan Region (6)
- RWQCB 6V  
Lahontan Region (6)  
Victorville Branch Office
- RWQCB 7  
Colorado River Basin Region (7)
- RWQCB 8  
Santa Ana Region (8)
- RWQCB 9  
San Diego Region (9)
- Other

DEPARTMENT OF TRANSPORTATION  
DISTRICT 7, REGIONAL PLANNING  
IGR/CEQA BRANCH  
120 SO. SPRING ST.  
LOS ANGELES, CA 90012  
PHONE (213) 897-6536  
FAX (213) 897-1337  
E-Mail:NersesYerjanian@dot.ca.gov



*Flex your power!  
Be energy efficient!*

Ms. Sarah Easley  
Environmental Services  
Los Angeles Dept. of Water & Power  
111 N. Hope St., Room 1044  
Los Angeles, CA. 90012

RE: IGR/CEQA # 040865NY  
NOP/River Supply Conduit Pipeline  
LA/5/

August 30, 2004

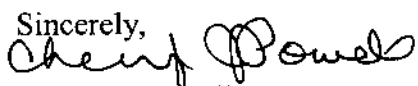
Dear Ms. Easley:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the proposed replacement of River Supply Conduit Pipeline in Los Angeles City boundaries.

Based on our evaluation of the information received, this project may require encroachment permit review by Caltrans. We recommend that the City, at its earliest convenience, submit six (6) complete sets of plans including two (2) sets of all engineering documents to the Caltrans Permits Office for review.

We would like to remind you that any transportation of heavy construction equipment and/or materials which requires the use of oversized-transport vehicles on State highways will require a Caltrans transportation permit. We recommend that large size truck trips be limited to off-peak commute periods.

If you have any questions regarding this response, please call the Project Engineer/Coordinator Mr. Yerjanian at (213) 897-6536 and refer to IGR/CEQA # 040865NY.

Sincerely,  
  
Cheryl J. Powell  
IGR/CEQA Branch Chief  
Regional Transportation Planning  
Caltrans, District 7



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178  
(909) 396-2000 • [www.aqmd.gov](http://www.aqmd.gov)

August 31, 2004

Ms. Sarah Easley  
Environmental Program Manager  
Los Angeles Dept. of Water and Power  
Environmental Services  
111 North Hope Street, Room 1044  
Los Angeles, CA 90012

Dear Ms. Easley:

## **Notice of Preparation of a Draft Environmental Impact Report for River Supply Conduit 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 Environmental Impact Report (EIR). Please send the SCAQMD a copy of the Draft EIR upon its completion.

### **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. Alternatively, lead agency may wish to consider using the California Air Resources Board (CARB) approved URBEMIS 2002 Model. This model is available on the CARB Website at: [www.arb.ca.gov](http://www.arb.ca.gov).

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project. Air quality impacts from both construction and operations should be 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. An analysis of all toxic air contaminant impacts due to the decommissioning or use of equipment potentially generating such air pollutants should also be included.

**Mitigation Measures**


In the event that the project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures be utilized during project construction and operation to minimize or eliminate significant adverse air quality impacts. To assist the Lead Agency with identifying possible mitigation measures for the project, please refer to Chapter 11 of the SCAQMD CEQA Air Quality Handbook for sample air quality mitigation measures. 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. 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. Please call Charles Blankson, Ph.D., Air Quality Specialist, CEQA Section, at (909) 396-3304 if you have any questions regarding this letter.

Sincerely,



Steve Smith, Ph.D.  
Program Supervisor, CEQA Section  
Planning, Rule Development and Area Sources

SS:CB:li

LAC040827-02LI  
Control Number



**Metro**

Metropolitan Transportation Authority

One Gateway Plaza  
Los Angeles, CA 90012-2952

213.922.2000 Tel  
metro.net

September 14, 2004

Ms. Sarah Easley, Environmental Program Manager  
Los Angeles Department of Water and Power, Environmental Services  
111 North Hope Street, Room 1044  
Los Angeles, CA 90012

Dear Ms. Easley:

Thank you for the opportunity to comment on the Notice of Preparation (NOP) for the River Supply Conduit Project. This letter conveys recommendations from the Los Angeles County Metropolitan Transportation Authority (LACMTA) concerning issues that are germane to our agency's statutory responsibilities in relation to the proposed project.

A Traffic Impact Analysis (TIA), with both highway and freeway, and transit components, is required under the State of California Congestion Management Program (CMP) statute. The CMP TIA Guidelines are published in the "2002 Congestion Management Program for Los Angeles County", Appendix D. The geographic area examined in the TIA must include the following, at a minimum:

1. All CMP arterial monitoring intersections, including monitored freeway on/off-ramp intersections, where the proposed project will add 50 or more trips during either the a.m. or p.m. weekday peak hour (of adjacent street traffic); and
2. Mainline freeway-monitoring locations where the project will add 150 or more trips, in either direction, during either the a.m. or p.m. weekday peak hour.

Among the required steps for the analysis of development-related impacts to transit are:

1. Evidence that the affected transit operators received the NOP for the Draft EIR;
2. A summary of the existing transit services in the area;
3. Estimated project trip generation and mode assignment for both morning and evening peak periods;



**Metro**

Metropolitan Transportation Authority

One Gateway Plaza  
Los Angeles, CA 90012-2952

213.922.2000 Tel  
metro.net

4. Documentation on the assumptions/analyses used to determine the number of percentage of trips assigned to transit;
5. Information on facilities and/or programs that will be incorporated in to the development plan that will encourage public transit usage and transportation demand management (TDM) policies and programs; and
6. An analysis of the expected project impacts on current and future transit services along with proposed project mitigation.

The MTA looks forward to reviewing the Draft EIR. If you have any questions regarding this response, please call me at 213-922-6908 or email at [chapmans@metro.net](mailto:chapmans@metro.net). Please send the Draft EIR to the following address:

LACMTA  
One Gateway Plaza  
Attn: Susan Chapman  
Long Range Planning, 99-23-2  
Los Angeles, CA 90012-2952

Sincerely,

Susan Chapman  
Program Manager, Long Range Planning

State of California - The Resources Agency

ARNOLD SCHWARZENEGGER, *Governor***DEPARTMENT OF FISH AND GAME**

<http://www.dfg.ca.gov>  
4949 Viewridge Avenue  
San Diego, CA 92123  
(858) 467-4201



September 20, 2004

Ms. Sarah Easley  
Los Angeles County Department of Water and Power  
111 North Hope Street, Room 1044  
Los Angeles, CA 90012

**Notice of Preparation for an Environmental Impact Report for  
River Supply Conduit Project, Project # 03-254  
Los Angeles County**

Dear Ms Easley:

The Department of Fish and Game (Department) appreciates this opportunity to comment on the above-referenced project, relative to impacts to biological resources. The proposed project involves the construction of a new river supply conduit to replace an existing line. The new line will be located in a new location and will run from North Hollywood through Griffith Park to a connection line below Los Feliz Boulevard, City of Los Angeles.

To enable Department staff to adequately review and comment on the proposed project we recommend the following information, where applicable, be included in the Draft Environmental Impact Report:

1. A complete, recent assessment of flora and fauna within and adjacent to the project area, with particular emphasis upon identifying endangered, threatened, and locally unique species and sensitive habitats.
  - a. A thorough recent assessment of rare plants and rare natural communities, following the Department's Guidelines for Assessing Impacts to Rare Plants and Rare Natural Communities (Attachment 1).
  - b. A complete, recent assessment of sensitive fish, wildlife, reptile, and amphibian species. Seasonal variations in use of the project area should also be addressed. Recent, focused, species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with the Department and U.S. Fish and Wildlife Service.
  - c. Rare, threatened, and endangered species to be addressed should include all those which meet the California Environmental Quality Act (CEQA) definition (see CEQA Guidelines, Section 15380).
  - d. The Department's California Natural Diversity Data Base in Sacramento should be



Ms. Sarah Easley  
September 20, 2004  
Page 2

contacted at (916) 327-5960 to obtain current information on any previously reported sensitive species and habitats, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code. Also, any Significant Ecological Areas (SEAs) or Environmentally Sensitive Habitats (ESHs) or any areas that are considered sensitive by the local jurisdiction that are located in or adjacent to the project area must be addressed.

2. A thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts. This discussion should focus on maximizing avoidance, and minimizing impacts.
  - a. CEQA Guidelines, Section 15125(a), direct that knowledge of the regional setting is critical to an assessment of environmental impacts and that special emphasis should be placed on resources that are rare or unique to the region.
  - b. Project impacts should also be analyzed relative to their effects on off-site habitats and populations. Specifically, this should include nearby public lands, open space, adjacent natural habitats, and riparian ecosystems. Impacts to and maintenance of wildlife corridor/movement areas, including access to undisturbed habitat in adjacent areas, should be fully evaluated and provided. The analysis should also include a discussion of the potential for impacts resulting from such effects as increased vehicle traffic and outdoor artificial lighting.
  - c. A cumulative effects analysis should be developed as described under CEQA Guidelines, Section 15130. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.
  - d. Impacts to migratory wildlife affected by the project should be fully evaluated. This can include such elements as migratory butterfly roost sites and neo-tropical bird and waterfowl stop-over and staging sites. All migratory nongame native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (50 C.F.R. Section 10.13). Sections 3503, 3503.5 and 3513 of the California Fish and Game Code prohibit take of birds and their active nests, including raptors and other migratory nongame birds as listed under the MBTA.
  - e. Impacts to all habitats from City or County required Fuel Modification Zones (FMZ). Areas slated as mitigation for loss of habitat shall not occur within the FMZ.
  - f. Proposed project activities (including disturbances to vegetation) should take place outside of the breeding bird season (February 1- September 15) to avoid take (including disturbances which would cause abandonment of active nests containing eggs and/or young). If project activities cannot avoid the breeding bird season, nest surveys should be conducted and active nests should be avoided and provided with a minimum buffer as determined by a biological monitor (the Department recommends a minimum 500-foot buffer for all active raptor nests).
3. A range of alternatives should be analyzed to ensure that alternatives to the proposed project are fully considered and evaluated. A range of alternatives which avoid or otherwise minimize impacts to sensitive biological resources including wetlands/riparian habitats, alluvial scrub, coastal sage scrub, native woodlands, etc. should be included. Specific alternative locations should also be evaluated in areas with lower resource sensitivity where appropriate.

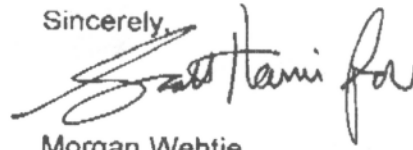
Ms. Sarah Easley  
September 20, 2004  
Page 3

- a. Mitigation measures for project impacts to sensitive plants, animals, and habitats should emphasize evaluation and selection of alternatives which avoid or otherwise minimize project impacts. Compensation for unavoidable impacts through acquisition and protection of high quality habitat elsewhere should be addressed.
  - b. The Department considers Rare Natural Communities as threatened habitats having both regional and local significance. Thus, these communities should be fully avoided and otherwise protected from project-related impacts (Attachment 2).
  - c. The Department generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare, threatened, or endangered species. Department studies have shown that these efforts are experimental in nature and largely unsuccessful.
4. A California Endangered Species Act (CESA) Permit must be obtained, if the project has the potential to result in "take" of species of plants or animals listed under CESA, either during construction or over the life of the project. CESA Permits are issued to conserve, protect, enhance, and restore State-listed threatened or endangered species and their habitats. Early consultation is encouraged, as significant modification to the proposed project and mitigation measures may be required in order to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, require that the Department issue a separate CEQA document for the issuance of a CESA permit unless the project CEQA document addresses all project impacts to listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of a CESA permit. For these reasons, the following information is requested:
- a. Biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA Permit.
  - b. A Department-approved Mitigation Agreement and Mitigation Plan are required for plants listed as rare under the Native Plant Protection Act.
5. The Department opposes the elimination of watercourses and/or their channelization or conversion to subsurface drains. All wetlands and watercourses, whether intermittent, ephemeral, or perennial, must be retained and provided with substantial setbacks which preserve the riparian and aquatic habitat values and maintain their value to on-site and off-site wildlife populations.
- a. The Department requires a Streambed Alteration Agreement (SAA), pursuant to Section 1600 et seq. of the Fish and Game Code, with the applicant prior to any direct or indirect impact to a lake or stream bed, bank or channel or associated riparian resources. The Department's issuance of a SAA may be a project that is subject to CEQA. To facilitate our issuance of the Agreement when CEQA applies, the Department as a responsible agency under CEQA may consider the local jurisdiction's (lead agency) document for the project. To minimize additional requirements by the Department under CEQA the document should fully identify the potential impacts to the lake, stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the Agreement. Early consultation is recommended, since modification of the proposed project may be required to avoid or reduce impacts to fish and wildlife resources.

The Department suggests a pre-project or early consultation planning meeting for all projects. To make an appointment, please call Scott Harris, Wildlife Biologist, at (626) 797-3170. Thank you for this opportunity to provide comment.

Ms. Sarah Easley  
September 20, 2004  
Page 4

Sincerely,



Morgan Wehtje  
Environmental Scientist IV

Attachments

cc: Mr. Scott Harris  
Department of Fish & Game

Mr. Scott Morgan  
State Clearinghouse

HCP-Chron  
Department of Fish and Game

SPH:sph



CITY OF BURBANK  
275 EAST OLIVE AVENUE, P.O. BOX 6459, BURBANK, CALIFORNIA 91510-6459  
[www.ci.burbank.ca.us](http://www.ci.burbank.ca.us)

September 21, 2004

Ms. Sarah Easley, Environmental Program Manager  
Los Angeles Department of Water and Power, Environmental Services  
111 North Hope Street, Room 1044  
Los Angeles, CA 90012

Dear Ms. Easley:

The City of Burbank, Park, Recreation & Community Services Department is in receipt of your correspondence dated August 24, 2004 regarding the Notice of Preparation of an Environmental Impact Report pertaining to the River Supply Conduit Project.

We noted that the report refers to the possibility that Johnny Carson Park (Buena Vista Park) was mentioned as a potential site for construction staging as it relates to this project. We would like to suggest one of the other potential sites be considered as this park is highly visible and is a well utilized park within our community. Also, this park serves as a venue for several special large scale events conducted annually. Furthermore, the park is located in close proximity to the Los Angeles Equestrian Center and nearby riding trails. Some of the equestrian trail system is located adjacent to Johnny Carson Park and the potential incompatibility with our equestrian community and a construction staging zone will also create public concern.

In addition, the project also identifies that it could have a substantial impact on several of our large mature specimen trees located in the subject park. The impact could result in several trees in the park being damaged or removed as a result of this project. We would like to encourage that a pro-active design/development approach be taken as this project proceeds forward so that minimal to nominal impact is experienced within our park's large and mature tree population.

We understand that this project is in the very preliminary stages, but wanted this letter to serve as an acknowledgment of its receipt and to go on record early in the process identifying possible issues or concerns associated with this project.

I can be reached for any questions or further clarification at (818) 238-5315.

Sincerely,



JANICE G. BARTOLO  
DEPUTY DIRECTOR/PARK SERVICES

JGB:jc

cc: Eric Hansen  
Jeffrey Zoumbaris

**CITY OF LOS ANGELES**  
CALIFORNIAWayne K. Tanda  
GENERAL MANAGERJAMES K. HAHN  
MAYOR**DEPARTMENT OF  
TRANSPORTATION**221 N. FIGUEROA ST., SUITE 500  
LOS ANGELES, CA 90012  
(213) 580-1177  
FAX (213) 580-1188**River Supply Conduit Project  
CEN 04-1552**

September 24, 2004

Sarah Easley, Environmental Program Manager  
Los Angeles Department of Water and Power (LADWP), Environmental Services  
111 North Hope Street, Room 1044  
Los Angeles, CA 90012

**NOTICE OF PREPARATION (NOP) OF A DRAFT ENVIRONMENTAL IMPACT REPORT  
(DEIR) FOR THE PROPOSED RIVER SUPPLY CONDUIT PROJECT WHICH RUNS  
ALONG PUBLIC STREET RIGHTS-OF-WAY, LADWP PROPERTY, AND LADWP  
UTILITY EASEMENT IN THE NORTH HOLLYWOOD, SILVER LAKE, AND LOS FELIZ  
COMMUNITIES (INCLUDING GRIFFITH PARK)**

The Los Angeles Department of Transportation (LADOT) has reviewed the NOP of the DEIR for the proposed River Supply Conduit (RSC) Project. The area through which the pipeline is proposed to be constructed is bounded by Sherman Way to the north, U.S. Highway 170/101 (Hollywood Freeway) to the west and southwest, Interstate 5 (Golden State Freeway) to the east, and State Route 2 (Glendale Freeway) to the southwest. The proposed project would replace the old RSC pipeline with a new, larger pipeline in a new alignment. The construction would involve 70,000 linear feet (13.3 miles) of 48-, 60-, 66-, 72-, 84-, and 96-inch diameter welded steel underground pipeline. Construction would take place between October 2005 to July 2010 for a total of 57 months. The construction will be separated into seven phases.

**CONSTRUCTION MANAGEMENT PLAN**

The NOP will not require a formal traffic impact analysis. However, construction of the pipeline will require coordination with LADOT in developing construction management plans to alleviate the impact to traffic during construction along the pipeline route. LADOT recommends that a Traffic Construction Management Plan be submitted to LADOT's Construction Traffic Management Section for review and approval prior to the start of any construction work. The plan should show the location of any roadway or lane closures,

Sara Easley

- 2 -

September 24, 2004

traffic detours, haul routes, hours of operation, flagmen, protective devices warning signs, and maintaining local access including existing bike lanes if applicable.

LADWP's contractor should contact LADOT's Construction Traffic Management Section, telephone (213) 485-2610, to arrange a pre-design meeting to finalize the proposed traffic management plans needed for the project. The contractor should also contact LADOT's East Valley District Office, telephone (818) 374-4688, and LADOT's Hollywood-Wilshire District Office, telephone (323) 845-0969, for review and approval of traffic management plans.

LADWP must fund LADOT staff time spent working on construction management plans review and approval.

### TRANSIT IMPACTS

The construction management plan should identify any potential impacts to transit including any re-routing of MTA and tour buses as a result of the temporary closure of streets along the route and consider any appropriate mitigation measures for transit patrons.

If you have any questions, please contact Wes Pringle of my staff at (213) 580-5206.

Sincerely,



Mike Bagheri  
Transportation Engineer

s:\letters\river\_supply\_conduit\_nop.wpd

c: Council District No. 2  
Council District No. 4  
Irwin Chodash, East Valley District, LADOT  
Robert Camou, Hollywood-Wilshire District, LADOT  
Hadar Plafkin, Department of City Planning

**CITY OF LOS ANGELES**  
Interdepartmental Correspondence

DATE: October 1, 2004

TO: Sarah Easley, Environmental Program Manager  
Department of Water and Power, Environmental Services

FROM: Kathleen Chan, Acting Superintendent  
Planning and Development  
Department of Recreation and Parks



SUBJECT: Notice of Preparation (NOP) of an EIR for the River Supply Conduit Project

The Department of Recreation and Parks has reviewed the Notice of Preparation (dated August 24, 2004), and the accompanying Initial Study for the proposed River Supply Conduit Project. Since a major portion of the pipeline will affect Griffith Park, the Department submits the following comments for consideration during preparation of the Environmental Impact Report.

- Although the Initial Study does not reflect final right-of-way of the conduit in the area of the Travel Town Museum, the conflicted narrative text from various charts and figures throughout the Initial Study suggests a tunnel under the Museum, probably under the new \$2 million Trainshed or under the new display railroad track built in accord with the Museum's Master Plan. The routing of the conduit through the Museum, and the potential conflicts with recent and planned improvements, represent a significant impact to the Museum, both during construction and in perpetuity. This matter must be studied further for re-routing and/or satisfactory mitigation.
- The historic Feliz Adobe (Historic-Cultural Monument # 401) is omitted from the listing of historical resources on Page 37. The Griffith Park Merry-Go-Round should also be added as a historic resource within this document. There is no discussion regarding the historic pump house facilities within Griffith Park (Crystal Springs Picnic Area and Train Ride) and whether these will be included in the project, demolished, or turned over to the Department of Recreation and Parks. The EIR must include a plan for monitoring the conditions and stableness of the Park's historic resource on a regular basis during and after construction.
- Buena Vista Park has a significant role in this project, both as an excavation/jack tunneling site and as a construction staging area. DWP should be informed that most of the subject property is owned by the City of Los Angeles, and maintained by the City of Burbank for many years under a lease now expired. This may be an opportune time to return operations of this portion of Griffith Park back into the hands of the Department of Recreation and Parks. After the RSC Project is completed, this land can be landscaped as a riparian habitat connected (via the lands running along the LA River) to the Pollywog Area as an additional natural, riparian habitat with horse trails. This reclamation project of long-forgotten parkland can be reconnected with the rest of Griffith Park through the development of the LA River Bike Path bridge (linking Buena Vista/Pollywog to Griffith Park's Headworks lands. This plan would be a welcome addition for the City of Burbank



Sarah Easley, Environmental Program Manager

October 1, 2004

Page 2

since they have wanted a bridge in this location so the Bike Path can avoid going through the Rancho community. This bridge and the habitat restoration should be paid for by DWP as mitigation for this project and for the reservoir project slated for Headworks.

- The Initial Study identifies “lots” in Griffith Park as being ready construction staging areas, admits to major traffic impacts, and touches on soil hauling as an issue. Griffith Park has limited amounts of parking now, and visitors may find mobility challenges already on high-attendance days. DWP must commit to establishing and adhering to set requirements in: traffic coordination; cessation of work on weekends and holidays (with restoration of work areas); selection, coordination, and restoration of laydown areas; soil and hazardous material routes and storage; detouring schedules. DWP must commit to funding the agreed-upon requirements.
- There are several locations referencing the Mulholland Fountain and Memorial Park as being Department of Recreation and Parks property. It is DWP property.
- There is some discussion of the construction of a Regulator Station constructed underground within the Headworks Spreading Ground. An integration with the future WP reservoir/project proposed in this area must be provided.
- Urban trees are the most prominent and precious of the City’s natural resources. The Department’s Forestry Division is the custodian of all trees located within the City’s parks and recreation facilities and has developed an Urban Forestry Program (documented in a guidebook dated April 2003) that provides policy and procedural guidance in the management and protection of the trees. The proposed pipeline has the potential to adversely impact oaks and other trees along the “Lower Reach” alignment that traverses Griffith Park. Therefore, developing effective mitigation measures to avoid or offset these impacts is of paramount importance. To aid in this effort, attached are three key sections or appendices from the Urban Forestry Program guidebook: Section 4 of the Tree Care Manual entitled “Protection of Trees During Construction”; DRP Tree Preservation Policy (Appendix A); and Policies for the Installation and Preservation of Landscaping and Trees on Public Property (Appendix M).
- With respect to the mitigation measures BIO-7 and BIO-9 listed on page 36, consideration only seems to be given to the project’s impact on “mature” trees. The Department of Recreation and Parks protects all trees, so the development of mitigation measures should be consistent with this policy.
- For actions involving the replacement of trees stated in BIO-9, please refer to the attachment entitled “Policies for the Installation and Preservation of Landscaping and Trees on Public Property”, specifically No. 6: Replacement of Trees.



Sarah Easley, Environmental Program Manager

October 1, 2004

Page 3

- Add as a reporting measure in BIO-8 (p.36) that whenever trees are planned to be impacted by the project a status report be given to the City's Community Forest Advisory Committee (CFAC), which meets on the first Tuesday of each month. Also, provisions should be made to contact Teresa Prosewicz, Principal Forester for the Department, on any project meetings or deliberations that involve the fate of the trees in Griffith Park or other affected parklands. She can be reached at (213) 485-6547.
- With respect to regulatory permits and approvals required for the project, Table 1-5 on pp.21-22 should include under the Department of Public Works an Oak Tree Permit from the Bureau of Street Services, Street Tree Division. The permit, of course, would require the approval of the Board of Public Works.

We appreciate the opportunity to comment on the NOP/Initial Study for the River Supply Conduit Project. If you need to follow up on any of our comments, please call David Attaway, Environmental Supervisor, at (213) 928-9130. Also, when the Draft EIR is ready for distribution, the Department would like to receive five (5) copies. Please mail them to: David Attaway, Environmental Supervisor, Department of Recreation and Parks, 1200 W. 7<sup>th</sup> Street, Suite 700, Los Angeles, CA 90017.

KC/DA:ct

Attachments

cc: George Stigile, Assistant General Manager  
Mark Mariscal, Superintendent, Griffith Metro Region (MS 656.1)  
Linda Barth, Sr Management Analyst II (MS 656/3)  
Teresa Prosewicz, Principal Grounds Maintenance Supervisor II (MS 656/6)  
Rory Fitzpatrick, Council District 4 (MS 235)  
Jeanne Chang, Council District 4 (MS 235)

## **DRP TREE PRESERVATION POLICY**

### **Purpose**

The purpose of the Tree Preservation Policy is to establish a regulatory tool to provide orderly protection of specified trees, protect their value, and avoid significant negative impacts to the ecosystem. The Policy regulates protection of trees in four categories: Trees Protected by LA City Ordinances, Heritage Trees, Special Value Trees, and all other Common Park Trees.

### **Trees Protected by LA City Ordinances:**

The current City of Los Angeles Ordinance protects coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), or any other tree of the oak genus indigenous to California measuring eight inches or more in diameter, four and half feet above the ground level at the base of the tree. The Board of Public Works must issue a permit before any alterations to protected trees are made that could cause them to be damaged, relocated or removed. Pruning also requires a permit and must comply with the Oak Tree Pruning Standards set forth by the Western Chapter of the International Society of Arboriculture. Illegal pruning or willful damage to any protected oak tree can result in a \$10,000 fine and/or 6 months in jail. If the tree poses an immediate threat to life or public safety, the DRP Arborist has the discretion to modify this process, maintaining proper documentation, including digital photographs. Oak trees identified as dead by the DRP Arborist can be removed without a permit.

### **Heritage Trees:**

Heritage trees are individual trees of any size or species that are specifically designated as heritage because of their historical, commemorative, or horticultural significance. The list of designated Heritage Trees remains open for new designations and provides useful information to DRP staff regarding the importance of their actions while planning activities near heritage trees. Since Heritage Trees are protected trees, recommendations from the DRP Arborists must be obtained before any alterations to the protected trees is made that may cause the tree to become damaged, relocated, or removed. The General Manager of DRP or his/her designee must approve the recommendation before any action proceeds. Pruning also can cause irreversible damage to the tree and must be in compliance with the ISA Tree Pruning Guidelines. Pruning must be performed under supervision of an ISA certified staff only. If the tree poses an immediate threat to life or public safety, the Arborist of the Forestry Division may compromise the process, if proper documentation, including digital photographs, is kept. Heritage trees identified as dead by the DRP Arborist will be removed and recorded into the designated Heritage Trees list. The Heritage Trees list can be obtained from Regional Headquarters Office and the Forestry Division.

## Appendix A

### Special Value Trees:

After more than a century of development, the native and indigenous landscape throughout the City has changed significantly. Special value trees, because of decreasing numbers and their fragility in an urban setting, are particularly noteworthy here.

- California native trees provide habitat for state or federally protected animal species.
- California native trees that are located in the Pacific Flyway are important to thousands of migratory birds each spring and fall during migration season.
- Native trees provide a foundation for a healthy ecosystem

The following California native trees are protected in this group: California sycamore (*Platanus racemosa*), California bay (*Umbellularia californica*), box-elder (*Acer negundo* 'Californica'), big leaf maple (*Acer macrophyllum*), California walnuts (*Juglans californica* and *J. hindsii*), toyon (*Heteromeles arbutifolia*), native cherry trees (*Prunus ilicifolia*, *Prunus lyonii*), cottonwood (*Populus fremontii*, *P. trichocarpa*), and native willow trees (*Salix hindsiana*, *S. laevigata*, *S. lasiandra*, *S. lasiolepis*). Additional species may be included in this group with respect to their species habitat value.

Special Value Trees are protected trees. Before any alterations to protected trees are made that may cause them to be damaged, relocated, or removed, a recommendation for action must be obtained from the DRP Arborists. The recommendation, which outlines measures to protect and preserve and in some circumstances remove, must be approved by the General Manager of DRP or his/her designee before any action proceeds. Some forms of pruning also can cause irreversible damage to trees and must be in compliance with the ISA Tree Pruning Guidelines. Pruning must be performed under supervision of ISA certified staff only. If the tree poses an immediate threat to life or public safety, the DRP Arborist may intervene, maintaining documentation and digital photos. Special Value trees identified as dead by the Forestry Arborist will be removed and recorded into the Forestry Work Order System.

### Common Park Trees

Most City parks contain mature exotic trees that have great value beyond the shade they provide to park users. They are a scenic resource to surrounding neighborhoods and their removal or disfigurement by extreme pruning for construction clearance or other reasons diminishes the value of the urban forest and often provokes public protest. Some trees have not been designated under a protected group of trees but still provide aesthetic, sentimental, economical, and environmental value.

## Appendix A

The large number of trees in our parks has a significant cooling effect on the urban environment in Los Angeles, where tree canopy represents only 25% of the land. Every tree in our City parks is recognized as a valuable asset and must be protected. The TREE CARE MANUAL provides guidelines for protecting trees during construction and offers suggestions and alternative technical solutions to avoid damages to trees. The Department's Regional Head is responsible for seeing that the Maintenance, Recreation, and Construction staff follows and implements tree preservation and protection practices outlined in the TREE CARE MANUAL.

## **4.0 Protection of Trees During Construction**

### **Introduction**

The objective of this section is to reduce the negative affects of construction on trees to a less than significant level.

Land development is a complex process and is even more challenging when trees are involved. Construction is one of the greatest causes of tree decline and death in urban areas.

The long-term goal of the Forestry Division is urban forest sustainability. This describes the maintenance of social, recreational, ecological and economic functions of trees and their benefits over time. Stewardship of naturally occurring and planted trees is a central element in forest sustainability. Concerns about tree health and structure, preservation during development and redevelopment, species and site selection, quality of planting stock, standards of performance, maintenance practices in our parks, and recycling are integral to a sustainable urban forest.

Tree protection should not begin subsequent to construction. If preservation measures are delayed or ignored until construction begins, the trees may be destined to fail. Because in most cases construction affects to trees cannot be completely eliminated, the goal for our parks planners and designers is to keep injury to trees to a minimum and allow building projects to proceed at the same time.

Successful tree preservation occurs when designers, construction personnel, and project managers are committed to tree preservation. All members of the project team must be familiar with the rudimentary aspects of tree growth and development in order to understand the relationship between tree survival and construction practices. Myths abound how trees grow.

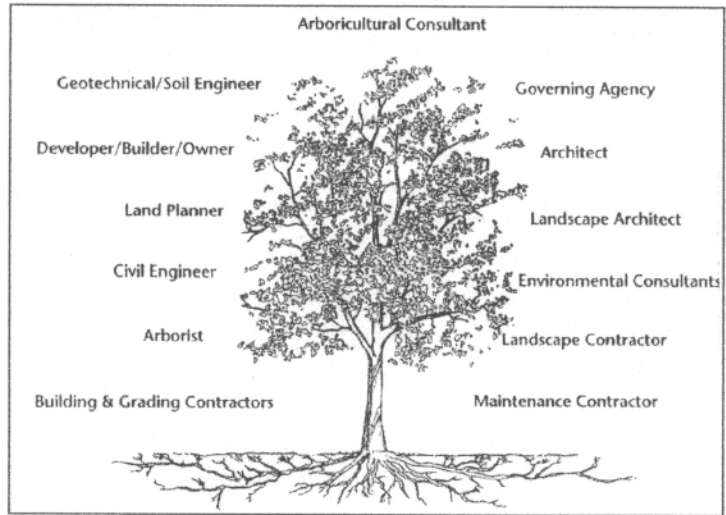
For example, above ground parts of trees is not a "mirror" of what lies below ground. In actuality, typically four to eleven large roots radiate from the base of a tree's trunk. These "buttress" roots extend from the root crown and sometimes are visible when the trunk flares away from the root crown or collar. These large roots decrease in taper rapidly and branch repeatedly so that at distances of ten feet or more from the trunk they are about ½ inch in diameter or smaller.

These roots grow horizontally through the soil and depending on the tree can extend 40 feet or more beyond the branch tips. These smaller roots are primarily responsible for water and mineral absorption. There can be hundreds of roots in a cubic inch of soil—thus any removal of soil or root severance forces a tree to compromise its physiological processes to sustain the loss.

All trees cannot and should not be preserved. Trees that are structurally unstable, in poor health, or unable to survive effects of construction become a liability to the project and should be removed. A realistic tree preservation program acknowledges that conflicts between trees and development may sometimes result in the removal of some

trees and recognizes the detrimental effect to the project and community when trees die after construction is completed.

Successful tree preservation occurs when construction impacts to trees are minimized or avoided altogether. The challenge is to determine when impacts will be too severe for the tree to survive, not only in the short term, but also in the long term. There are no quantitative methods to calculate this critical level. Determining the optimum tree protection zone provides a guideline, although trees often survive and flourish with smaller protection areas.



Matheny, N.P. and Clark, J.R. 1998. *Trees and Development*

***Tree Preservation during development requires the commitment of everyone involved in the project's planning, design, construction, and management.***

The following are the three guiding principles for tree preservation:

- The acknowledgement that not all trees are in excellent health or have good structural stability.
- Tree preservation cannot be the responsibility of the Forestry staff alone. Each development participant must understand that his or her activities and decisions influence the success of tree preservation efforts.
- The ability of an arborist to cure construction injury is very limited, so the focus of preservation efforts is the *prevention* of damage.

Following the above principles will increase the chance for success and reduce the possibility that trees will die.

Efforts at preservation must include acknowledgement of the tree and its ecological support system.

#### 4.10 Planning for All Projects

Capital improvement projects, in-house construction projects, sport field renovations, and even the addition of a few sprinkler lines affect trees. Our department considers trees as important assets and requires plotting tree locations on plans for all projects.

##### 4.10.1 Planning and Designing for Capital Improvement Projects

Projects are designed by in-house design staff and by outside design firms. Either design team should be given set of guidelines defining the Department's *Tree Preservation Policy* (Appendix A) and *Tree Protection Guidelines* (Appendix G and Appendix I), to assure that trees are accounted for from project initiation forward.

###### A) Survey before Planning

The survey must accurately plot the trunk locations within the project site. Include construction staging areas and delivery routes.

###### B) Plan and Design with Knowledge of Trees

The health and structural confirmation of the surveyed trees must be evaluated in order to anticipate how well they will respond to development. The evaluation must describe the character of trees and their suitability for preservation at a level of detail appropriate for the project and phase of planning. An arboricultural or forestry consultant must be obtained for this evaluation.

###### C) Plan with a Vision

Disruption of any tree by construction activities may negatively affect its physiological processes, and cause depletion of energy reserves and decline in vigor, often resulting in tree death. Typically this does not manifest until many years after the tree is disrupted. Preservation of mature trees during construction has limitless benefits to the success of a project.

When new trees are planted, consideration should be given to species diversity and appropriateness of location. To prevent destructive clearance pruning in future years, keep in mind the ultimate canopy and root spread.

###### D) Plan for all Aspects and Entire Duration of Project

Construction projects are multi-level and often require participation of various construction trades and subcontractors. It is important to plan for tree protection with an understanding of construction dynamics. Trees must be protected in the staging area, construction employee parking area, adjacent properties, as well as on the actual construction site.

##### 4.10.2 Managing In-House Construction Projects

The in-house Construction team should be given set of guidelines that define the Department's *Tree Preservation Policy* (Appendix A) and *Tree Protection Guidelines* (Appendix G and Appendix I), and to assure that trees are accounted for from project initiation forward.



A) Survey before Planning

For all in-house projects, contact the Forestry Division for an accurate survey of trees on the job site.

B) Plan and Design with Knowledge of Trees

In order to better understand the condition of the affected trees, the Forestry Division will make available the results of the tree evaluation. This evaluation will provide you with knowledge of the resources and the anticipated construction tolerance of the affected trees.

C) Plan with a Vision

Obtain information about trees and minimize negative impacts on the urban forest. Conduct all projects with tree preservation in mind.

D) Plan for all Aspects and for the Entire Duration of the Project

Trees must be protected in the staging area, construction employee parking area, and during demolition and grading. Arrange with the Sr. Park Maintenance Supervisor for trees to be watered and for the soil to be protected from compaction.

#### 4.20 Pre-Construction Requirements - Tree protection and Preservation Plan

Prior to the commencement of a development project, the R&P Project Manager, and/or City-Wide Construction Supervisor, and/or Regional Head must be assured that if any activity of the project is within the dripline of *Protected Trees*, a site specific tree protection plan is prepared. The following six steps shall be incorporated as part of the Tree Protection and Preservation Plan:

##### 4.20.1 Site Plan

For all projects, site plans must indicate accurately plotted trunk locations and *the dripline* areas of all trees or group of trees to be preserved within the development area. Additionally, for all *Protected Trees* the plans shall accurately show the trunk diameter, dripline and clearly identified *tree protection zones*. The type of protective fencing shall be specified and indicated with a bold dashed line.

##### 4.20.2 Protective tree fencing for all categories of *Protected Trees*

Fenced enclosures shall be erected around trees to be protected. This will achieve three primary goals, (1) to keep crowns and branching structure clear from contact by equipment, materials, and activities; (2) to preserve roots and soil condition in an intact and non-compacted state and; (3) to identify the *Tree Protection Zone* in which no soil disturbance is permitted and activities are restricted, unless otherwise approved by the DRP Arborist.

All trees to be preserved shall be protected with five to six (5 to 6) foot high chain link fences. Fences are to be mounted on two-inch galvanized iron posts, driven into the ground to a depth of at least two feet and at no more than ten-foot centers. Install a two-foot wide access gate for tree maintenance. Tree fences shall be erected before demolition, grading, or construction begins and remain until final inspection of the



project. The "Warning" sign shall be prominently displayed on each protective fence. The sign shall be a minimum of 8.5 inches x 11 inches and clearly state the following:

***TREE PROTECTION ZONE***  
**This Fence Shall Not be Removed**

All work within the *Tree Protection Zone* requires approval of the DRP Arborist.

- A) Type I Tree Protection Fence is for trees to be preserved throughout the duration of the project. The fences shall enclose the entire area under the canopy dripline or *Tree Protection Zone*, if specified by the DRP Arborist. If fencing must be located on paving or concrete that will not be demolished, an appropriate grade level concrete base may support the posts.
- B) Type II Tree Protection Fence is for trees situated in small planting areas, where only the planting area is enclosed with the required chain link protective fencing. The walkways and traffic areas are left open to the public.
- C) Type III Tree Protection Fence is for trees in small tree wells, building site planters or sidewalk planters. Trees shall be wrapped with 2 inches of orange plastic fencing from the ground to the first branch and overlaid with 2-inch thick wooden slats that are bound securely (slats shall not be allowed to dig into the bark). During installation of the plastic fencing, caution shall be used to avoid damaging branches. Major scaffold limbs may also require plastic fencing as directed by the DRP Arborist.

No storage of material, topsoil, vehicles, or equipment shall be permitted within the fenced area throughout the entire duration of the construction project.

#### 4.20.3 Verification of tree protection

The project contractor or construction supervisor shall verify in writing that all pre-construction tree preservation conditions have been met as follows:

- A) Tree fencing installed
- B) Erosion control secured
- C) Tree pruning completed
- D) Soil compaction preventive measures installed
- E) Tree maintenance schedule established

The Planning and Construction Project Manager, City-wide Construction Supervisor, or Region Head Superintendent and Head of Recreation and Parks Urban Forest must sign this verification.

#### 4.20.4 Pre-construction meeting

The DRP Arborist shall attend all pre-construction meetings to assure that everyone fully understands previously reviewed procedures and tree protective measures concerning the project site, staging areas, hauling routes, watering, contacts, etc.

#### 4.20.5 Tree Protection Zone

Each tree to be retained shall have a designated *Tree Protection Zone* identifying the area sufficiently large enough to protect it and its roots from disturbance. The *Tree Protection Zone* shall be shown on all site plans: Demolition, Grading, Irrigation, Electrical, Landscape, etc. Improvements or activities such as paving, utility and irrigation trenching including other ancillary activities shall occur outside the *Tree Protection Zone*, unless otherwise specified. The protection fence shall serve as the *Tree Protection Zone*.

##### A) **Activities prohibited within the *Tree Protection Zone* include:**

- Parking vehicles or equipment, storage of building materials, refuse, or excavated soils, or dumping poisonous material on or around trees and roots. Poisonous materials include, but are not limited to paint, petroleum products, concrete, stucco mix, dirty water or any material that may be harmful to tree health
- The use of tree trunks as a backstop, winch support, anchorage, as a temporary power pole, signpost or other similar function
- Cutting of tree roots by utility trenching, foundation digging, placement of curbs and trenches, or other miscellaneous excavations without prior approval of the DRP Arborist
- Soil disturbance or grade change
- Drainage changes

##### B) **Activities permitted or required within the *Tree Protective Zone* include:**

- **Mulch:** During construction, wood chips may be spread within the *Tree Protection Zone* to a four to six inch depth, leaving the trunk clear of mulch. This will aid in inadvertent soil compaction and moisture loss. Mulch shall be 2-inch unpainted, untreated shredded wood or approved material.
- **Root Buffer:** When areas under the tree canopy cannot be fenced, a temporary buffer is required and shall cover the root zone and remain in place at the specified thickness until the final grading stage. The protective buffer shall consist of shredded wood chips spread over the roots at a minimum of 6-inches in depth (keeping the trunk clear of chips), and layered by ¾-inch quarry gravel to stabilize the ¾-inch plywood sheets laid on top. Steel plates can also be used.
- **Irrigation, Aeration, fertilization, Mycorrhizae** treatments or other beneficial practices that have been specifically approved for use within the *Tree Protection Zone*.

**C) Erosion Control:**

If a tree is adjacent to or in the immediate proximity to a grade slope of 8% (23 degrees) or more, approved erosion control or silt barriers shall be installed outside the Tree Protection Zone to prevent siltation and/or erosion within the zone.

**4.20.6 Tree Pruning and Removal**

Prior to construction, various trees may need to be pruned away from structures or proposed construction activity. **Construction or contractor personnel shall not attempt pruning.** Only personnel approved by the DRP Arborist can perform pruning operations.

Removal of trees adjacent to trees that are to remain requires a great amount of finesse. Only personnel approved by the DRP Arborist shall engage in tree removal. Removal of trees that extend into branches or roots of protected trees **shall not be attempted** by the demolition or construction crew, or by grading or other heavy equipment. Before removing tree stumps, the project manager shall determine if roots are entangled with trees that are to remain. If so, these stumps shall have their roots severed before extracting them.

**4.30 Activities During Construction and Demolition Near Trees**

Soil disturbance or other damaging activities within the Tree Protection Zone is prohibited unless approved by the DRP Arborist and mitigation for specific injuries is implemented. **No encroachment within 10 feet of a trunk will be permitted under any circumstances.**

**4.30.1 Soil Compaction**

Soil compaction is the largest single factor responsible for the decline of trees on construction sites. The degree of compaction depends on several factors: amount and type of pressure applied, presence and depth of surface organic litter, soil texture and structure, and soil moisture level.

The greatest increase in soil density occurs during the first few equipment passes over the soil, which underscores the importance of implementing protective measures before the project begins and equipment arrives at the site. To dispense traffic weight mulch and temporarily root buffers can be used.

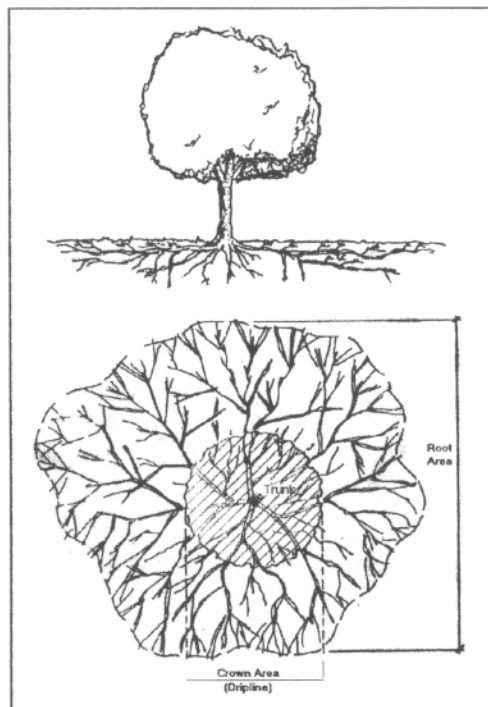
The following techniques can lessen compaction: vertical mulching, soil fracturing, core venting, and radial trenching. Do not compact soil to higher density than needed: to 95% Proctor density (moisture – density) in improved areas for asphalt or concrete pavements, and not to exceed 85% in unimproved open landscape areas that use water jet compaction.

**4.30.2 Grading Limitations within the Tree Protection Zone**

Lowering the grade around trees can have an immediate and long-term effect on trees. Typically, most roots are within the top 3 feet of soil, and most of the fine roots active in water and nutrient absorption are in the top 12 inches.

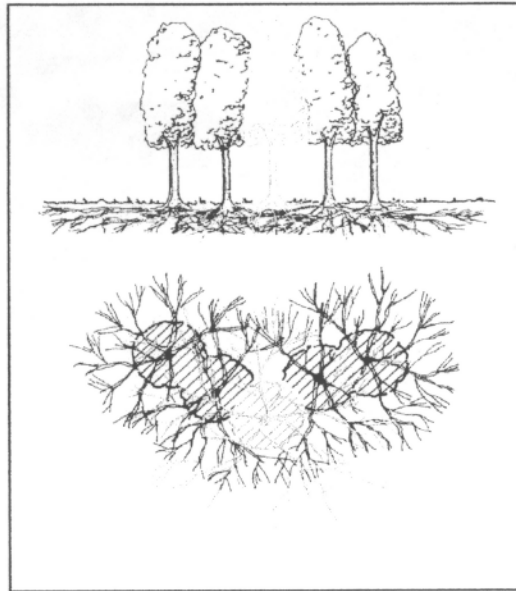
- A) Grade changes within the *Tree Protection Zone* are not permitted.
- B) Grade changes outside the *Tree Protection Zone* shall not significantly alter drainage.
- C) Grade changes under specifically approved circumstances shall not allow more than 6 inches of fill soil or allow more than 4 inches of existing soil to be removed from natural grade, unless mitigated.
- D) Grade fills over 6 inches or impervious overlay shall incorporate an approved permanent aeration system, permeable material, or other approved mitigation.
- E) Grade cuts exceeding 4 inches shall incorporate retaining walls or an appropriate transition equivalent.

The pictures on the next pages illustrate the pattern of tree root development and areas where encroachments may have an adverse effect on tree health. See Training Leaflets (Appendix P) for a list of information offered by the Forestry Division. The video, *Guide for Excavating Near Trees, Tunneling and Trenching* (International Society of Arboriculture) can be borrowed from the Forestry Office.



Matheny, N.P. and Clark, J.R. 1998. *Trees and Development*

***Tree root system of a tree can be described as shallow and widespread, extending far beyond the edge of the canopy.***



Matheny, N.P. and Clark, J.R. 1998. *Trees and Development*

***In many parks where trees grow closely together, root systems of individual trees overlap and intertwine, forming a dense mat of roots.***

#### 4.30.3 Trenching, Excavation and Equipment Use

Trenching, excavation or boring within the *Tree Protection Zone* shall be limited to activities approved by the DRP Arborist. Explore alternatives for trenching outside the root zone. Avoid exposing roots during hot, dry weather. Backfill trenches as soon as possible with soil and soak with water the same day. Small roots can die in 10 to 15 minutes and large roots may not survive an hour of exposure. If the trench must be left open all roots must be kept moist by wrapping them in peat moss and burlap.

If trenching is unavoidable, the following distances should be maintained:

TRUNK DIAMETER (measured at 4.5 feet above natural grade)	DISTANCE FROM BOTH SIDES OF THE TRUNK
Up to 6 inches	Past dripline
6-9 inches	5 feet
10-14 inches	10 feet
15-19 inches	12 feet
over 19 inches	15 feet

A) **Root Severance.** No roots greater than 2 inches in diameter shall be cut without approval of the DRP Arborist. Tunneling under roots is the approved alternative. Prior to excavation for foundation/footing/walls, or grading or trenching within the *Tree Protection Zone*, roots shall be severed cleanly one-foot outside the *Tree Protection Zone* to the depth of the planned excavation. When roots must be cut, they shall be cut cleanly with a sharp saw to sound wood and flush with the trench site.

B) Excavation. Any approved excavation, demolition, or extraction of material shall be performed with equipment that is placed outside the *Tree Protection Zone*. Hand digging, hydraulic, or pneumatic excavation are permitted methods for excavation within the *Tree Protection Zone*.

C) Heavy Equipment. Use of backhoes, Ditch-Witches, steel tread tractors or other heavy vehicles within the *Tree Protection Zone* is prohibited unless approved by the DRP Arborist. If allowed, a protective root buffer is required.

#### 4.30.4 Tunneling and Directional Drilling

Approved trenching or pipe installation within the *Tree Protection Zone* shall be either cut by hand, air-spade, or by mechanically boring a tunnel under the roots with a horizontal directional drill using hydraulic or pneumatic air excavation technology. In all cases, install the utility pipe immediately, backfill with soil and soak with water within the same day. Tunneling under the root system can greatly reduce both damage to the tree and the cost to repair landscape and other features destroyed in the trenching process. There are times, such as when working in rocky soils and slopes, when tunneling is not a reasonable alternative.

The following recommendations for tunneling depths should be observed:

TRUNK DIAMETER (DBH)	MINIMUM DEPTH	TUNNEL
Less than 12 inches	24 inches	
12 inches or more	36 inches	

#### 4.30.5 Alternative Methods for Hardscape to Prevent Root Cutting

The following remedies should be considered as an alternative to severing tree roots:

- A) Grinding a raised walkway or concrete pad
- B) Ramping the walkway surface over the roots or lifted slab with pliable paving.
- C) Routing the walkway around tree roots
- D) Permeable paving materials (e.g., decomposed granite), interlocking pavers, or flagstone walkways on sand foundations

#### 4.30.6 Using Alternative Base Course Materials

Engineered structural soil mix is an alternative material for hardscape areas near trees. More information can be found at [www.amereq.com](http://www.amereq.com).



#### **4.40 Tree Maintenance During Construction**

Providing adequate maintenance can mitigate stressful changes that occur to a tree's environment during construction. To remain vigorous the tree needs to maintain stored carbohydrates and preserve the effectiveness of its growth regulators. It is recommended that large projects provide:

##### **4.40.1 Irrigation**

Providing supplemental irrigation for trees under water stress may be the single most important treatment. Irrigation should be designed to wet the soil within the *Tree Protection Zone* to the depth of the root zone and to replace that water once it is depleted. Light, frequent irrigation should be avoided. Create a six-inch berm around trees at the edge of the *Tree Protection Zone* and fill with no more than six inches of mulch. Fill the basin with water. Irrigation should wet the top two to three feet of soil to replicate similar volumes and normal seasonal distribution.

##### **4.40.2 Soil Compaction Mitigation**

To prevent negligent encroachment into the *Tree Protection Zone*, trees to be preserved during construction must have the specified type of protection fences in place at all times. Removal of fences, even temporarily, to allow deliveries or equipment access is not allowed unless approved by the DRP Arborist and a root buffer is installed. The root buffer components: mulch, gravel and plywood, must be maintained continually to assure its effectiveness against soil compaction.

##### **4.40.3 Dust Control**

During periods of extended drought, wind or grading, trunks, limbs and foliage should be sprayed with water to remove accumulated construction dust.

#### **4.50 Damage to Trees**

##### **4.50.1 Reporting Injury to Trees**

Any damage or injury to trees shall be reported as soon as possible to the Project Manager or Construction Supervisor, and always to the Park Maintenance Supervisor. The Park Maintenance Supervisor needs to be aware of an injured tree in order to monitor its recovery or progress. Injuries to roots and branches must be repaired immediately.

##### **4.50.2 Contractor Subject to Penalties.**

If a tree designated to remain is removed or irreversibly damaged as determined by the Recreation and Parks Arborist, a contractor may be required to install a replacement tree matching in size, quality and variety, using a contractor designated by the Recreation and Parks Arborist. If an acceptable replacement tree is not available, the contractor may be required to pay damages to the City for the value of the damaged tree in accordance with the guidelines set forth in the Guide for Plant Appraisal, 9th Edition, using the Trunk Formula Method.

#### 4.50.3 Employees Subject to Discipline

In the event of damage to above- or below-ground parts of park trees, the Construction Supervisor or Park Maintenance Supervisor shall conduct an investigation to determine the cause of the damage. If it is found that damage was caused due to the error, negligence, or willfulness of a Department employee, then that employee may be subject to appropriate disciplinary action.

#### **4.60 Documents to be Included in all Projects**

##### 4.60.1 Model Tree Protection Specifications for Designers and Project Managers (Appendix G)

This document should be distributed to the Planning and Construction Designers, Project Managers, City Inspectors, bidding contractors, and contracted designing firms.

##### 4.60.2 Tree Protection Summary and Instructions on How to Prevent Damage to Trees During Construction (Appendix I)

This document should be distributed to the Construction and Maintenance staff for implementation during all in-house projects.

#### **4.70 Right Of Entry Permits and Documents to be included with every permit**

Carnivals and festivals that are celebrated in our parks provide exceptional and enriching opportunities that bring our communities together. These activities can potentially affect the park environment. Filming crews, food concessions, permitted vendors, and special events activities affect the physical properties of our parks and trees.

In order to sustain a healthy urban forest, it is imperative that all Department staff understands the need to protect park trees. Every individual, organization or agency given a Right of Entry, permit or agreement to enter Department property, should be in compliance with Department policies protecting park trees and be given documentation that will help to ensure tree protection during the permitted activity. The document titled Instructions on How to Prevent Damage to Trees During Construction (Appendix I) shall be distributed to every permittee and the permittee shall comply with these instructions.



**POLICIES FOR THE INSTALLATION AND PRESERVATION  
OF LANDSCAPING AND TREES ON PUBLIC PROPERTY  
Of Recreation and Parks Department**

Adopted by City Council, September 21, 1971; amended January 10, 1972 (Council File Nos. 70-1899; 132989 S-1 & S-2; and 145282 S-1)

1. GENERAL OBJECTIVES

*The urban forest is recognized as a vital infrastructure system essential to the quality of life in the City of Los Angeles. Tree canopy and landscaping are important factors in every neighborhood, enhancing aesthetics, mitigating the heat island effect, improving air quality, reducing stormwater runoff, providing economic, psychological and sociological benefits to all inhabitants. Therefore, planting new trees, which will develop broad canopies, as well as the preservation of mature tree canopy, and landscaping shall be considered to be a priority on all public property.*

2. PROPOSED IMPROVEMENT PROJECTS

All proposed improvement projects shall be planned to *provide* the optimum *tree cover* and landscaping required for conformance to the above general objectives. This shall apply to all improvement projects undertaken by the City, by other public agencies, or by the private sector.

Trees and landscaping shall be provided in or adjacent all parkways, on slopes adjacent streets, in isolated land remnants, in or adjacent all street frontages abutting public buildings or structures, in median and traffic islands, and on the grounds of public buildings.

*In addition, priority shall be given to shading hardscape features such as parking lots, roofs, plazas, etc. An adequate number of trees shall be planted so that 50% of the parking stall area in parking lots will be shaded within ten years. The only exception is to be when a conflicting use is planned, and implementation is to be within the next 10 years.*

During construction, if any portion of construction, its lay down areas, or its staging areas affects existing landscaping, detailed guidelines for tree preservation and protection during construction shall be implemented.

3. FINANCIAL RESPONSIBILITY

The installation of landscaping and trees which provide wide-spread general benefits to the public may be paid for by the City, except that landscaping, other than trees, in parkway areas is generally provided by the abutting property owners. The benefiting property owners, community groups, or other parties may pay for landscaping and trees in parks.

4. AUTHORITY AND RESPONSIBILITY

a. Within the Recreation and Parks land

The Recreation and Parks Department is responsible for approving and maintaining trees and landscaping in all Recreation and Parks properties.

The Recreation and Parks' Planning and Construction Division is responsible for the preparation of improvement plans for landscaping and park tree installation within Recreation and Parks land.

## Appendix M

### b. Adjacent Public Buildings and within Their Grounds, Including Parking Lots

The *Department of General Services* has *primary* responsibility for the landscaping and trees related to public buildings, their grounds and *parking lots* as well as the public ways immediately contiguous thereto, and for the preparation of related improvement plans.

## 5. REMOVAL

The cutting down or removal of structurally sound trees by City forces, or by private parties under contract with the City, shall be prohibited.

Unless necessitated by urgent reasons of safety, imminent death of the tree, *requirements of individual trees*, or to permit the installation of a greatly needed public facility, existing trees located on public property shall not be removed. Before removal of existing trees is approved, a detailed investigation of all possible alternatives so as to salvage the trees shall be made. Such alternates shall include, but are not limited to, the following:

- a. *Developing*, especially for streets, sidewalks, and other *hardscape*, power and communications lines, storm drains, and sewers.
- b. Jogging roadway alignments from one side of the right of way to the other to avoid existing *mature* trees.
- c. Relocating tree to an acceptable nearby location, where appropriate.
- d. Placing sidewalks immediately adjacent the roadway when location adjacent the property line causes interference with trees.
- e. *Relocating* proposed buildings or other structures, including their structural elements, to avoid interference with existing trees.

The cutting down or removal of sound trees is further prohibited between the hours of 6 p.m. and 7 a.m. and on any Saturday, Sunday, or legal holiday except emergencies.

*Whenever the removal of five or more trees or any outstanding tree specimen, especially a large, historical or significantly handsome tree is proposed, the following procedure shall be followed:*

The *Councilmember* of the respective district, the Planning and Construction Division, the Forestry Division, the General Manager of the Recreation and Parks Department, and *Community Forest Advisory Committee (CFAC)* shall be consulted regarding possible alternatives.

## 6. REPLACEMENT OF TREES

Whenever trees are removed, the existing trees' aggregate diameter, measured at breast height (D.B.H., or 4.5-feet above the ground; multi-trunk trees are to be measured immediately below the lowest trunk) shall be replaced at an equal or greater rate of caliper of new trees. Each one-inch D.B.H. of existing tree shall be replaced with a minimum one-inch caliper new tree. Replacement trees shall have a minimum caliper of ¼-inch. For example, a single-trunk tree whose D.B.H. is 9 inches may be replaced with 36 trees of ¼-inch caliper, or with 3 trees of 3-inch caliper. This replacement ratio should

## Appendix M

represent a *minimum*. If the replacement ratio cannot be achieved on an individual project, it should be applied on an area-wide basis.

All replacement trees shall be healthy and free of kinked, overgrown, or otherwise defective roots.

### 7. TYPES OF TREES

The type of park trees installed in a particular area shall conform to the master plan maintained by the Recreation and Parks Department and to one or more of the following: best management practices, suitable species for a site determined by the Recreation and Parks' arborist, Street Tree Planting Guide, and other professional tree planting guides. Deviations shall only be made with the approval of the Recreation and Parks arborist.

*Tree types shall be selected with the viewpoint of maximizing environmental, aesthetic and other tree values balanced with acceptable maintenance levels. Wherever suitable, blooming and accent foliage trees shall be utilized. Trees that will eventually provide a wide canopy and significant shade shall be favored. When community plantings are planned, the consensus of the property owners shall be given heavy consideration*

*The landscaping of publicly owned properties and parking lots shall conform to the City's Landscape Ordinance.*

### 8. MAINTENANCE OF TREES

*Maintenance of landscaping based on the best available arboricultural practices and urban forestry practices using state-of-the-art professional standards for planting, pruning, and general maintenance including but not limited by use of the most recent management tools shall be the responsibility of the Recreation and Parks Department. Agencies shall develop a maintenance schedule for trees located on lands under their control*

### 9. DESIGN PERSONNEL

To insure a high degree of professional expertise, personnel responsible for directly supervising the street trees and landscaping program, and for preparing related improvement plans shall be licensed professionals in the field of landscape architecture, arboriculture, or urban forestry.

### 10. COORDINATOR FOR LANDSCAPING AND TREE PROGRAMS

The Bureau of Street Services shall coordinate meetings as needed for program changes that affect multiple Departments. The Memorandum of Understanding between the multiple Departments need be kept in force to assure exchange of information, collaboration, contribution and equal cost share of the Arbor Day celebrated as a joint educational outreach. The Community Forest Advisory Committee (CFAC) shall advise City Departments in determining the landscaping and tree policy program and the coordination of that program. In addition, the CFAC shall report to City Council on a quarterly basis, the Departments' progress towards establishing their respective landscaping and tree policies.

## Easley, Sarah

---

**From:** Birla, Dev [DBirla@ci.burbank.ca.us]  
**Sent:** Wednesday, October 06, 2004 4:07 PM  
**To:** Easley, Sarah  
**Cc:** Mace, Bill; Baker, Roger  
**Subject:** RE: RSC comments

Sarah ,

If you recall I was the first one from the City of Burbank to call you and inform you about my concerns . As we stated during the meeting we believe that LADWP need to investigate the route through City of Los Angeles streets only ( follow Lankershim Blvd. to Moorpark street or Valley Spring and turn south to cross LA River and stay on LA side on the Forest Lawn Drive ) as suggested by Fred Lantz- AGM for Water services . We believe it is too risky to route the pipe line along Riverside Drive in the heart of Media District and it may interfere with our existing electrical and fiber optics facilities or limit the future expansion / under grounding of existing overhead lines in that area . We are also concerned about the public relations part and inconvenience to the COB -customers . We recommend that LADWP should find different route than circulated to us and should be out of COB boundary line .

These are our comments on EIR and thanks for the opportunity to comment on this project EIR.

Dev

-----Original Message-----

**From:** Easley, Sarah [mailto:Sarah.Easley@ladwp.com]  
**Sent:** Tuesday, October 05, 2004 5:26 PM  
**To:** Moheize, Omar; Baker, Roger  
**Cc:** Lantz, Fred; Mace, Bill; Simay, Greg; Birla, Dev; Teaford, Bonnie; Johnson, Kenneth; Andersen, Rodney; Herrmann, Greg; Holloway, Chuck; Bonfiglio, Tania  
**Subject:** RE: RSC comments

Hi Omar,

We are very interested in the City of Burbank's comments on LADWP's proposed RSC project. Per CEQA and our Project schedule, the 30 day comment period for the August 24 IS-NOP ended on September 24. We are currently working to complete a draft EIR for internal review by early November for a public release in December. I am happy to provide additional time for your comments, however a 5 week extension to October 28 will significantly impact our schedule. At the September 21st meeting at your office, we discussed extending the comment period to October 1st. In order for us to adequately evaluate, respond, and incorporate your comments into the Draft EIR, we need to receive your comments by October 15th, which is three weeks beyond the close of the comment period. Please contact me if you anticipate problems meeting this deadline.

Thank you for your cooperation.

Sarah Easley  
Los Angeles Department of Water and Power  
Environmental Services  
ph: 213-367-1276 fx: 213-367-4710  
sarah.easley@ladwp.com

-----Original Message-----

**From:** Moheize, Omar [mailto:OMoheize@ci.burbank.ca.us]

Sent: Tuesday, October 05, 2004 2:15 PM  
To: Baker, Roger; Easley, Sarah  
Cc: Lantz, Fred; Mace, Bill; Simay, Greg; Birla, Dev; Teaford, Bonnie;  
Johnson, Kenneth; Andersen, Rodney; Herrmann, Greg  
Subject: RE: RSC comments

Hi Sarah:

I am routing the NOP through PWD Traffic, Sewer, storm drain and street divisions with due date back to me before October 20,2004 so I can forward a response to you before October 28th the due date stated on the NOP.

Thanks

Omar

-----Original Message-----

From: Baker, Roger  
Sent: Tuesday, October 05, 2004 1:40 PM  
To: 'Easley, Sarah'  
Cc: Lantz, Fred; Mace, Bill; Simay, Greg; Birla, Dev; Teaford, Bonnie;  
Johnson, Kenneth; Andersen, Rodney; Moheize, Omar; Herrmann, Greg  
Subject: RE: RSC comments

Sarah,

I know that Fred Lantz and Bill Mace in our Water Division of the Burbank Water and Power Department have comments regarding both the "All LA Route" and providing a minimum clearance between grade and the top of the pipe. I would expect you would receive those comments this week. I know that the Electrical Division also have similar concerns, and would expect you would also receive their comments this week. I will also send you comments this week from the Planning Division that convey some of the same concerns.

I haven't heard from our Transportation Division of the Community Development Department or the Public Works staff with regards to issues they might have, but I do know they are reviewing the NOP and discussing any potential impacts that they would like to have addressed. I will ask them to forward any comments they do have as quickly as possible.

Roger

-----Original Message-----

From: Easley, Sarah [mailto:Sarah.Easley@ladwp.com]  
Sent: Tuesday, October 05, 2004 12:32 PM  
To: Roger Baker (E-mail)  
Subject: RSC comments

Roger,

I was wondering if you had an update about when I might expect written comments from the City of Burbank on the NOP-IS for the proposed River Supply Conduit Project. We are currently developing an EIR alternative based on the 'all L.A.' route suggested at our September 21 meeting, and want to be sure that we are considering all of the City of Burbank's comments during this process.

Thank you!

Sarah Easley

Los Angeles Department of Water and Power

Environmental Services

ph: 213-367-1276 fx: 213-367-4710

sarah.easley@ladwp.com

**Easley, Sarah**

---

**From:** Mace, Bill [BMace@ci.burbank.ca.us]  
**Sent:** Thursday, October 07, 2004 3:14 PM  
**To:** Easley, Sarah  
**Cc:** Lantz, Fred; Simay, Greg; Teafor, Bonnie; Baker, Roger; Birla, Dev; Andersen, Rodney; Herrmann, Greg; Moheize, Omar  
**Subject:** RE: River Supply Conduit - EIR Comments

I see that Dev Birla sent an individual response. The enclosed comments are for the Water Division of BWP and would round out the Departments' response.

1. Our major concern is the impact the construction of the line would have on available alignments for future utility construction and/or relocations for projects and needs that are not currently contemplated. We have had considerable internal discussion about the proper depth for our own underground utilities so that interference is limited for parallel alignments or at crossings. I would expect that the proposed pipeline would need a **minimum of 10 feet of cover** from the road surface to the top of pipe so that it would not be a hindrance to future utility installation. A pipeline at that depth would likely not be an impediment to most future work.
2. Other pipeline routes are available but apparently have not been studied as intently as the Riverside Dr. route. There is a potential route within the boundaries of Los Angeles as well as an existing LADWP R-O-W through Burbank along Whitnall Highway. Open alignments for pipeline installation are a valuable commodity. It would be better to utilize or recycle the resources you already have.
3. Water utilities are generally shown correctly on the submitted x-sections. In addition, there are utility crossings at nearly every intersection as well as numerous services that cross Riverside Dr. along the proposed route.
4. The plans do not show the 42-inch MWD Santa Monica feeder at Olive and Riverside Dr. This is a major feature that has been overlooked.
5. Cal Trans bridges and ramps are near the alignment at Hollywood Way and Olive Ave. The excavation for the pipeline may cause problems with bridge abutments and will surely aggravate traffic congestion beyond the "normal" problems caused by trenching in main thoroughfares.
6. A portion of the proposed alignment is identified in the Burbank General Plan as a seismic liquefaction area due to high ground water.
7. The Cathodic Protection of a pipeline will have to be designed to not interfere with all the other existing utilities.
8. The project doesn't appear to offer any benefit to Burbank. What could possibly offset the obvious disruption and inconvenience that the construction of this project would have on the residents of Burbank?

-----Original Message-----

**From:** Easley, Sarah [mailto:Sarah.Easley@ladwp.com]  
**Sent:** Monday, September 27, 2004 12:30 PM  
**To:** Mace, Bill  
**Subject:** RE: River Supply Conduit - EIR Comments

Thank you. I look forward to receiving them.

*Sarah Easley*

Los Angeles Department of Water and Power  
Environmental Services  
ph: 213-367-1276 fx: 213-367-4710  
[sarah.easley@ladwp.com](mailto:sarah.easley@ladwp.com)

-----Original Message-----

**From:** Mace, Bill [mailto:BMace@ci.burbank.ca.us]  
**Sent:** Friday, September 24, 2004 5:34 PM  
**To:** Easley, Sarah  
**Cc:** Lantz, Fred; Baker, Roger; Simay, Greg  
**Subject:** River Supply Conduit - EIR Comments

Burbank Water and Power will be providing combined/comprehensive comments on the River Supply Conduit Project EIR from our Department in the near future.

## Easley, Sarah

---

**From:** Bonfiglio, Tania  
**Sent:** Wednesday, October 13, 2004 4:36 PM  
**To:** Easley, Sarah  
**Subject:** FW: Notice of Preparation for the River Supply Conduit Project

-----Original Message-----

**From:** David Attaway [mailto:DAttaway@rap.lacity.org]  
**Sent:** Wednesday, October 13, 2004 3:29 PM  
**To:** Bonfiglio, Tania  
**Subject:** Fwd: Notice of Preparation for the River Supply Conduit Project

>>> David Attaway 10/13/04 03:22PM >>>

Tania,

As we discussed this morning on the phone, Teresa Prosciewicz, Principal Forester for Recreation and Parks, informed me by e-mail that another rare plant has been identified in Griffith Park on both sides of Mount Hollywood called *Arctostaphylos glandulosa mollis*. While it appears the project will not impact this plant, it should be identified in the EIR.

Thanks,

David Attaway, Environmental Supervisor  
Department of Recreation and Parks



**Easley, Sarah**

---

**From:** Moheize, Omar [OMoheize@ci.burbank.ca.us]  
**Sent:** Thursday, October 14, 2004 3:05 PM  
**To:** Easley, Sarah; Mace, Bill  
**Cc:** Lantz, Fred; Simay, Greg; Teaford, Bonnie; Baker, Roger; Birla, Dev; Andersen, Rodney; Herrmann, Greg; Moheize, Omar  
**Subject:** RE: River Supply Conduit - EIR Comments

Hi Sarah:

Attached, a word document outlining Public Works Department views and conditions on the proposed alignment of the RSC project.

Thank You  
Omar Moheize, P.E.  
Senior Civil Engineer  
DPW

**NOTICE OF PREPARATION REVIEW COMMENTS  
PUBLIC WORKS DEPARTMENT**

ATTN: Sara Easley, Environmental Program Manager

SUBJECT: Notice of Preparation of an Environmental Impact Report  
River Supply Conduit Project  
Los Angeles Department of Water and Power, City of Los Angeles

LOCATION: Riverside Drive within the City of Burbank

**ENGINEERING DIVISION**

**General Requirements:**

The City of Burbank Public Works Department(PWD) has a restrictive policy for any excavation work within the public right-of-way. Our preference is for the City of Los Angeles to choose an alternative route that avoids passing through City of Burbank. Also, we anticipate that commercial establishments along the proposed alignment on Riverside Drive may ask for compensation for their business losses due to construction activities.

If your proposed alignment through Riverside Drive is the chosen one, these are some of the conditions that will be required by City of Burbank (PWD) / Engineering Design and permit sections:

- An excavation permit must be obtained from Public Works Departments/Permit section.
- The trench must be backfilled with one-sack slurry in major intersections.
- The trench backfill compaction must be tested by a certified Geotechnical laboratory and confirmation reports must be submitted for approval.
- Resurface or reconstruct full width of Riverside Drive (minimum 2" Asphalt Rubberized Hot Mix or more).
- Traffic detours and night work must avoid going through residential areas.
- National Pollutant Discharge Elimination System (NPDES) and Best Management Practices (BMPs) must be enforced.

For additional information or questions, please contact Omar Moheize, Senior Civil Engineer, at (818) 238-3943.

## WATER RECLAMATION AND SEWER

### General Requirements:

- Any crossings of sanitary sewers must be supported per APWA requirements and backfilled with one sack slurry to ensure proper compaction.
- Department Of Health Services (DHS) requirements must be met on all locations of parallel or crossing sewer pipes.
- All Burbank public sewer mains and sewer laterals must be potholed prior to any trenchless construction in the vicinity.
- Post construction video inspection of the public sewer and sewer laterals must be made following all trenchless construction locations.

### Comments on Cross Sections Provided by LA

There are a number of locations where the proposed alignment crosses sewer mains that are not shown on LA's plans.

- 2 in Screenland Drive
- 2 in Hollywood Way
- One in Olive Ave
- One on Bob Hope Drive – this is the North Outfall Sewer, a 48" City of LA pipe

There is a potential conflict with the City of L.A.'s 48-inch North Outfall Sewer located in Riverside Drive between Catalina and Buena Vista. The North Outfall sewer is vitally important to the operation of the City of Burbank's sewer system, and must not be harmed during the construction of the River Supply Conduit. Due to these concerns, for work done in Burbank, extensive potholing and surveying of existing utilities will be required before a permit is issued for this project.

There are a number of sewer laterals that tie into the sewer mains down Riverside Drive. As all sewers in the area are gravity flow, public sewer mains and sewer laterals cannot be relocated.

For additional information or questions, please contact Rodney Anderson at (818) 238-3931.

## STORM DRAIN

### General Requirements:

There is a potential conflict with the proposed alignment and the City of Burbank's and L.A. County's storm drains located in Unit 7 between Clybourn Avenue and Pass Avenue.

For additional information or questions, please contact Daniel Wall at (818) 238-3940.

## TRAFFIC ENGINEERING

### General Requirements

The proposed River Supply Conduit along Riverside Drive from the easterly City limit to westerly City limit of the City of Burbank will cause this roadway to be functioning as a two-lane facility. The existing roadway, which is four lanes with bike lanes and on-street parking, carries up to 17,000 cars per day and the proposed project will have significant impact on this regional corridor. Riverside Drive is a major feeder to the freeway access as well as all these north/south streets such as Pass Avenue, Hollywood Way, Buena Vista Street, Main Street, Verdugo Avenue, and series of residential streets. There are also Disney Studios, Warner Brothers Studios, Providencia High School and two city parks front this street. Staff recommends that LADWP choose an alternative route since this project will have a serious negative impact on traffic in the area.

If it is decided to use this street for the purpose of the RSC, the applicant shall be required to provide a traffic study and traffic control plan for the entire corridor in order to mitigate its impact. The traffic control shall phase the project in a manner to only affect certain blocks at a time. It shall also consider haul routes, the city noise ordinance, impact on major studios, school and city parks activity and all other impacts.

For additional information or questions, please contact Rabie Rahmani at (818) 238-3969.

**BOARD OF PUBLIC WORKS  
MEMBERS**

-  
VALERIE LYNNE SHAW  
PRESIDENT  
ELLEN STEIN  
VICE-PRESIDENT  
JANICE WOOD  
PRESIDENT PRO-TEM  
CYNTHIA M. RUIZ  
COMMISSIONER  
RONALD LOW  
COMMISSIONER  
JAMES A. GIBSON  
SECRETARY

# CITY OF LOS ANGELES

CALIFORNIA



**JAMES K. HAHN**  
MAYOR

DEPARTMENT OF  
PUBLIC WORKS

BUREAU OF  
**ENGINEERING**

GARY LEE MOORE, P.E.  
CITY ENGINEER

650 SOUTH SPRING ST., SUITE 200  
LOS ANGELES, CA 90014-1911  
213-847-8766

<http://eng.lacity.or>

January 3, 2005

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

Dear Ms. Easley:

## RIVER SUPPLY CONDUIT PROJECT

The Environmental Impact Report for the River Supply Conduit Project should consider the effect of the project on (and the potential for cumulative effects with) major sewer projects proposed for the project area. These include the Northeast Interceptor Sewer II (NEIS II), the Glendale-Burbank Interceptor Sewer (GBIS) and ancillary surface facilities.

NEIS II would extend from near the intersection of San Fernando Road and Cazador Street northward to near the intersection of Routes 5 and 134. One of the alignments under study would lie under or near Crystal Springs Drive to a portal in the northern portion of the Los Angeles Zoo parking lot. This alignment seems to be very similar to the alignments proposed for Units 2-4 of the River Supply Conduit, but at a depth deeper than your water line.

GBIS would extend from the northern end of NEIS II to the Toluca Lake area. Several of the alignments under study extend under or near Zoo, Forest Lawn and Riverside Drives similar to Units 1 and 7 of the proposed River Supply Conduit. At this time we anticipate tunneling at depths deeper than your water line. We are considering a portal just east of the site proposed for the River Supply Conduit regulator station.

The portals mentioned above are necessary for construction of the sewer (AKA "construction shafts") and may be used after construction for sewer maintenance and operation facilities (such as air treatment facilities). Maintenance access shafts (maintenance holes) will also be needed along the alignment ultimately selected.

The design development and CEQA processes for the River Supply Conduit, NEIS II and GBIS must be closely coordinated. Please coordinate with Mr. Nick Demos, the project manager for NEIS II and GBIS. He can be reached at 213-847-9600. We have been briefing Mr. Bill Van Wagoner of the Department of Water and Power's Water Resources Recycling Group as part of the Integrated Resources Program. The Environmental

ADDRESS ALL COMMUNICATIONS TO THE CITY ENGINEER

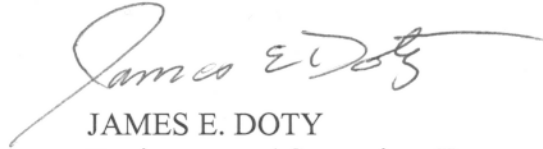
**AN EQUAL EMPLOYMENT OPPORTUNITY - AFFIRMATIVE ACTION EMPLOYER** Recyclable and made from recycled waste



Impact Report for that program will provide the CEQA process for NEIS II and GBIS (a Notice of Preparation, SCH# 2004071091, was published July 20, 2004). Please let us know if there is anyone else whom we should contact.

Thank you again for your prompt attention. If you need any additional information, please call me at (213) 847-8694.

Sincerely,



JAMES E. DOTY  
Environmental Supervisor II  
Environmental Group

JED:DWP River Supply Conduit Project

Cc: Wayne Lawson, Division Engineer  
Wastewater Conveyance Engineering Division  
Messenger Stop 538

Nick Demos, Project Manager  
Wastewater Conveyance Engineering Division  
Messenger Stop 538

Bill Van Wagoner, Waterworks Engineer  
Water Resources Water Recycling  
111 N Hope St #1315  
Los Angeles, CA 90012

Luci Misaka, Civil Engineering Assoc.  
Project Planning & Development  
111 N Hope St, Room 1348  
Los Angeles, CA 90012

**INTENTIONALLY LEFT BLANK**

---

**APPENDIX B**  
**MITIGATION MEASURES**

---



**INTENTIONALLY LEFT BLANK**

## B. Mitigation Measures

---

This appendix includes a list of mitigation measures the Los Angeles Department of Water and Power (LADWP) has agreed to implement for the Lower Reach River Supply Conduit (RSC) Project. These measures were introduced in the Initial Study (IS) and within this Environmental Impact Report (EIR) in Sections 3.1.4, 3.2.4, 3.3.4, and 5.4. The mitigation measures identified for the Lower Reach RSC Project are presented below by environmental issue area. The notation in parenthesis indicates where the mitigation measure was identified.

### **Aesthetics (IS)**

**AES-1** LADWP shall use the minimum amount of construction lighting necessary to safely light the construction worksite.

**AES-2** LADWP shall design, install, and shield all necessary construction lighting such that it minimizes the amount of spill or reflected light onto property adjacent to the construction site.

**AES-3** LADWP shall notify all persons and organizations potentially affected by nighttime lighting and shall coordinate the construction schedule such that conflicts are minimized. Coordination shall involve provision of an LADWP contact person to whom affected persons may direct lighting complaints. Persons and organizations to be contacted include, but are not limited to, the Griffith Park Observatory, the Los Angeles Zoo, the Gene Autry Museum of Western Heritage, and the California Department of Transportation (Caltrans).

### **Air Quality (EIR)**

**AQ-1** LADWP shall implement the following measures, in addition to/or as required by SCAQMD Rule 403, to reduce PM<sub>10</sub> emission during construction:

- Ground cover will be replaced in disturbed areas as quickly as possible;
- Active sites will be watered at least twice daily;
- All dirt hauling trucks will have tightly secured coverings;
- Trenching and excavation activities will be suspended during first and second stage smog alerts, and when wind speeds exceed 25 mph;
- After clearing, trenching, earth moving, or excavation is completed, the entire area of disturbed soil will be treated. Treatment, which will also occur during non-work days if necessary, will include watering, revegetating, or use of soil binders to prevent wind pick-up of the soil until the area is paved or otherwise developed to preclude dust generation and dispersion;
- Construction management techniques, including reducing the number of pieces of equipment used simultaneously and increasing the distance between the emission sources, will be employed as feasible to reduce potential emissions; and
- Street sweeping or washing will be performed at the conclusion of each workday and when needed.

**AQ-2** LADWP shall implement the following mitigation measures to reduce NO<sub>x</sub> and PM<sub>10</sub> emissions from non-road construction vehicles during construction:

- Tier 1 mobile construction equipment shall be used on-site;
- Construction equipment shall be maintained in tune per manufacturer's specifications;
- California Air Resources Board certified ultra low sulfur diesel fuel containing 15 ppm sulfur or less shall be used for on-site mobile and stationary construction equipment; and

- 
- Diesel engine idle time shall be restricted to no more than five minutes, except for construction equipment that needs to be maintained at idle to perform.

## **Biological Resources (IS/EIR)**

**BIO-1** Rare plant surveys shall be carried out in the off-road segment of the proposed project alignment in Unit 1a and in any segment of the proposed alignment through Griffith Park that would pass through native vegetation or vegetation that contains native species. Surveys shall be completed no later than April or May 2005, depending on growth conditions. In the event that the rare plant surveys yield positive results, LADWP would comply with applicable rules and regulations.

**BIO-2** To protect existing natural plant communities, LADWP shall use below ground construction in Unit 1a where the alignment deviates from Zoo Drive within Griffith Park. The dimensions of the jacking pits shall be minimized or the pits shall be placed to avoid direct or indirect impacts to native plant communities or native or nonnative mature trees, to the extent feasible.

**BIO-3** In those units where the discharge point for hydrostatic test water would be located within or upstream of soft-bottomed segments of the Los Angeles River (specifically in the soft-bottomed segment adjacent to Griffith Park) or its tributaries, the rate of discharge of the water shall be compatible with the range of flows naturally occurring within the affected reach during that time of the year to avoid or reduce impacts to the aquatic environment. This measure shall be implemented to the degree possible without conflicting with any requirements imposed by the Regional Water Quality Control Board.

**BIO-4** LADWP shall employ a qualified biological monitor with suitable background and experience to identify sensitive biological resources and monitor implementation of all the biological mitigation measures within natural areas, open space or parks where sensitive biological resources may be present, namely Units 1a, 1b, 2, 3 and 4.

**BIO-5** Pre-construction bird surveys shall be conducted in all vegetated areas of Units 1a, 1b, 2, 3 and 4 from the Headworks Spreading Grounds site through Griffith Park. The surveys shall identify the presence of breeding or nesting pairs or active nests of special status bird species within the project and construction footprint and an additional distance of 500 feet. In the event that surveys indicate habitat occupied by special status bird species within 500 feet of the construction or project footprint, appropriate construction protocol will be developed and implemented.

**BIO-6** LADWP shall manage their construction site, and related facilities, in a manner to avoid or minimize impacts to the local biological resources by implementing the following within Units 1a, 1b, 2, 3 and 4 in the segments from the Headworks Spreading Grounds site through Griffith Park:

- Temporarily cover pits and trenches or provide wildlife escape ramps or an approved exclusionary fence for construction areas that contain steep walled holes or trenches that are not required to be covered for human safety reasons. The temporary fence shall be hardware cloth or of similar materials that are approved for use by the U.S. Fish and Wildlife Service and the California Department of Fish and Game;
- Make certain all food-related trash will be disposed of in closed containers and removed at least once a week. Feeding of wildlife shall be prohibited;
- Prohibit pets from being brought to the site;

- 
- Report all inadvertent deaths or injuries of wildlife to the biological monitor who will in turn, notify and follow instruction provided by the City of Los Angeles Department of Recreation and Parks (LADRP);
  - Use native coastal sage scrub, chaparral species in the restoration of land temporarily disturbed during pipeline installation (see Mitigation Measures BIO-7 through BIO-9 below);
  - Restore temporarily disturbed sites to their pre-existing physical condition; and
  - Ephemeral drainages shall be restored to pre-construction topography/contours and compaction immediately following construction and installation activities. Furthermore, the proposed disturbance to such features may not affect (i.e., act as a barrier to) existing surrounding hydrologic conditions.

**BIO-7** LADWP shall complete a report that identifies all mature native and nonnative trees that would be directly or indirectly impacted by project construction. For ease of interpretation “mature” shall be defined consistent with the City of Los Angeles’ tree protection ordinance as 8 inches in diameter and greater than 4.5 feet high and applicable City of Burbank requirements. This includes all trees whose canopy is located entirely or partially within the pipeline alignment or construction footprint. It shall include trees that are located in segments where underground jacking will occur. The report shall indicate the location, species, size and condition of affected trees and a proposed plan for protection, relocation or replacement. The report shall be provided to the LADRP, Division of Forestry, and the Los Angeles Department of Public Works (LADPW).

**BIO-8** LADWP shall coordinate with the LADPW and the LADRP prior to construction to determine the applicable measures that need to be implemented from the LADPW Street Tree Policy and the LADRP Tree Preservation Policy. The purpose of this coordination shall be to identify construction protocols that would be implemented to reduce construction damage, and the pruning, removal and replacement of trees, including heritage trees, special value trees and common park trees.

**BIO-9** For any mature native or nonnative tree that must be removed, LADWP shall prefer replacement or relocation of trees within the same park or residential area in coordination with the LADPW, as applicable, for trees affected on city streets, or LADRP, as applicable, for trees affected within city parks. Nonnative trees removed within Griffith Park that cannot be successfully relocated shall be replaced with native trees consistent with LADRP recommendations.

### **Cultural Resources (IS/EIR)**

**CUL-1** LADWP shall conduct archaeological monitoring during all ground disturbing activities within Unit 4, specifically the area north of the Silver Lake Reservoir. Cultural resource monitoring locations shall be mapped and flagged prior to construction. Monitoring shall be conducted by a qualified archaeological monitor familiar with the cultural resources of southern California.

In the event a potential significant archeological resource is discovered, all work shall temporarily cease within the immediate area of the find until the site can be assessed by a qualified archeologist in consultation with the LADWP. If the material is determined to be significant, the qualified archeologist shall prepare and implement a treatment plan in consultation with the LADWP. Construction activity shall not resume until authorization has been provided by the LADWP and the qualified archeologist.

**CUL-2** LADWP shall require the qualified archeologist to provide a cultural resources briefing prior to the start of construction for all construction personnel. If construction personnel discover a cultural

---

resource in the absence of an archeological monitor, construction shall be halted and a qualified archeologist shall be contacted to make an immediate evaluation of significance and recommend appropriate treatment of the resource.

**CUL-3** LADWP shall conduct paleontological monitoring during all ground disturbing activities (excavation, trenching, boring, drilling, etc.) in the area of the Los Angeles River flood plain. Paleontological resource monitoring locations shall be mapped and flagged prior to construction. Monitoring shall be conducted by a qualified paleontologist familiar with paleontological resources of southern California. In the event a potentially significant paleontological specimen is uncovered, all work shall temporarily cease within the immediate area of the find until the specimen can be removed and assessed by the qualified paleontologist. If the material is determined to be significant, an adequate course of action shall be determined in consultation with the qualified paleontologist and LADWP, consistent with the Standards of Professional Paleontologists. Construction activity shall not resume until authorization has been provided by the LADWP and the qualified paleontologist.

**CUL-4** LADWP shall require the qualified paleontologist to provide a briefing prior to the start of construction for all construction personnel. If construction personnel discover a paleontological resource in the absence of a monitor, construction shall be halted and a qualified paleontologist shall be contacted to make an immediate evaluation of significance and recommend appropriate treatment of the resource.

**CUL-5** In the event that human remains or potential human remains are discovered, construction activities within the immediate area of the find shall be immediately halted. The LADWP Construction Project Manager shall immediately notify the LADWP Project Manager and the County Coroner. The County Coroner will make a determination as to the origin of the remains and, if determined to be of Native American origin, the Native American Heritage Commission (NAHC) will be contacted. In consultation with the Most Likely Descendant, the NAHC and qualified archeologist shall determine the disposition of the remains in accordance with California Health and Safety Code §7050.5 and CEQA Guidelines §15064.5(e). If the remains are not of Native American origin, the County Coroner will make a determination as to the disposition of the remains. Construction may continue once compliance with all relevant sections of the California Health and Safety Code have been addressed and authorization to proceed issued by the County Coroner and the LADWP.

## **Geology and Soils (IS)**

**GEO-1** A geotechnical investigation shall be conducted as indicated by the Engineering Standards Manual, Water Operating Division, Department of Water and Power, City of Los Angeles, Second Edition, Effective August 3, 1992, Chapter 10, Section 10.03. This investigation shall be conducted by a qualified professional, and conform to local and State requirements. This investigation shall identify the trace of the Hollywood-Santa Monica fault, and based on the findings of this investigation appropriate mitigation measures may be developed to reduce potential damage due to fault rupture. Results of this geotechnical investigation will support design considerations of constructing fault rupture mitigation measures and/or repairing the damaged pipeline. Construction and operation issues should be considered during design to identify practical measures that can be implemented within the urban setting along the Lower Reach.

---

**GEO-2** A geotechnical investigation shall be conducted to determine areas that will be susceptible to liquefaction related phenomena and ground lurching. This investigation shall be conducted by a qualified professional and conform to the requirements of the City of Los Angeles. Based on the findings of this investigation, appropriate mitigation measures may be developed to reduce potential damage due to liquefaction related phenomena. Results of the geotechnical investigation will support design considerations of constructing liquefaction and ground lurching mitigation measures and/or repairing the damaged pipeline. The latter option is the standard practice for non-hazardous pipelines and typically includes consideration of economic factors.

### **Hazards and Hazardous Materials (IS)**

**HAZ-1** LADWP or its construction contractor shall store fuel, oil, and other hazardous materials only at designated sites. Quantities of all hazardous materials stored on-site shall be avoided or minimized, and substitution of non-hazardous materials for hazardous materials shall be implemented to the extent practicable. Each hazardous material container shall be clearly labeled with its identity, handling and safety instructions, and emergency contact. Similar information shall be clearly available and visible in the storage areas. Storage and transfer of such materials shall not be allowed within 100 feet of streams or sites known to contain sensitive biological resources except with the permission of LADWP environmental compliance monitors. Material Safety Data Sheets shall be made readily available to the Contractor's employees and other personnel at the various work sites. The accumulation and temporary storage of hazardous wastes shall not exceed 90 days. Soils contaminated by spills or cleaning wastes shall be contained and shall be removed to an approved disposal site. Disposal of hazardous wastes shall be in compliance with the applicable laws and regulations.

**HAZ-2** LADWP or its construction contractor shall maintain construction equipment to minimize fuel, oil and other potentially hazardous material spills. Stationary power equipment, such as engines, pumps, generators, welders, and air compressors, shall be positioned over drip pans.

**HAZ-3** LADWP or its construction contractor shall store hazardous materials in containers with secondary containment.

**HAZ-4** In case of a spill or accident involving hazardous materials, LADWP or its construction contractor shall immediately notify the Los Angeles County Fire Department. All other federal, state, and local notification requirements shall be followed for any release that exceeds the reportable quantity or threatens to have a significant impact.

**HAZ-5** LADWP or its construction contractor shall protect tanks temporarily placed for refueling from potential traffic hazards by vehicle barriers.

**HAZ-6** LADWP shall establish an environmental training program to communicate environmental concerns and appropriate work practices, including spill prevention, emergency response measures, and implementation of proper best management practices, to all construction personnel. The training program shall emphasize site-specific physical conditions to improve hazard prevention (e.g., identification of potentially hazardous substances and sites along the pipeline route) and shall include

---

a review of all site-specific plans. A monitoring program shall also be implemented to ensure that the plans are followed throughout the period of construction.

### **Hydrology and Water Quality (IS)**

**WQ-1** All hydrostatic test water shall be treated for contaminants and toxic substances to meet the NPDES hydrostatic test permit before being discharged into surface waterbodies, as approved by the local Regional Water Quality Control Board or Bureau of Sanitation. All hydrostatic test water that does not meet the NPDES hydrostatic test permit requirement shall be discharged to an appropriate waste handling facility and not to surface waterbodies.

### **Noise (EIR)**

**N-1** LADWP or its construction contractor shall provide advance notice, between two and four weeks prior to construction, by mail to all residents or property owners within 100 feet of the pipeline alignment. The announcement shall state specifically where and when construction will occur in the area. If construction delays of more than 7 days occur, an additional notice shall be made, either in person or by mail. Notices shall provide tips on reducing noise intrusion, for example, by closing windows facing the planned construction. The LADWP shall also publish a notice of impending construction in local newspapers, stating when and where construction will occur.

**N-2** All noise-producing project equipment and vehicles using internal combustion engines shall be equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise reducing features kept in good operating condition that meet or exceed original factory specification. Mobile or fixed “package” equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and noise control features which are readily available for that type of equipment.

**N-3** All noise producing equipment in use along the project alignment shall be operated in the quietest manner possible. The equipment operator shall also avoid unnecessary equipment idling for long periods.

**N-4** The use of noise producing signals, including horns, whistles, alarms, and bells shall be for safety warning purposes only.

**N-5** Portable noise screens shall be used to provide additional shielding for jack hammering or other similar very noisy type activities when work is close to noise-sensitive areas.

**N-6** Nighttime construction activities (before 7:00 a.m. and after 9:00 p.m.) within Griffith Park shall comply with all Department of Recreation and Parks permit stipulations and shall not occur within 500 feet of residential buildings.

### **Transportation and Traffic (EIR)**

**T-1** Prior to the start of construction, LADWP shall submit a Construction Traffic Management Plan to the Los Angeles Department of Transportation for review and approval prior to the start of any construction work. The plan shall show the location of roadway or lane closures, traffic detours, haul routes, hours of operation, and local access (maintenance of), including bike lanes if applicable. The

---

Plan shall also discuss the use of flag persons, warning signs, lights, barricades, cones, etc. according to standard guidelines outlined in the Caltrans Traffic Manual, the Standard Specifications for Public Works Construction, and the Work Area Traffic Control Handbook (WATCH).

- T-2** LADWP shall provide a minimum of 48-hour advance notification of the potential for disrupted access to and parking for any business, residence, or recreational facility that may experience delayed access or reduced parking capacity in the vicinity. The notification shall include information on restoring access and the estimated amount of time that access may be blocked.
- T-3** If vehicular access to businesses, residences, and recreational facilities cannot be restored within eight (8) hours, LADWP or its construction contractor shall provide a one lane temporary vehicular bridge for access (LADWP Specification F01560 - Project Controls, Section 3.07D).
- T-4** LADWP shall coordinate in advance with emergency service providers to avoid restricting movements of emergency vehicles. Police departments, fire departments, ambulance services, and paramedic services shall be notified in advance by LADWP of the proposed locations, nature, timing, and duration of any construction activities and advised of any access restrictions that could impact their effectiveness. At locations where access to nearby property is blocked, provision shall be ready at all times to accommodate emergency vehicles, such as plating over excavations, short detours, and alternate routes in conjunction with local agencies. The Traffic Construction Management Plan (T-1) shall include details regarding emergency services coordination and procedures.



**INTENTIONALLY LEFT BLANK**

---

**APPENDIX C**  
**TRAFFIC STUDY**

---

**INTENTIONALLY LEFT BLANK**

**Traffic Study for the  
Los Angeles Department of  
Water and Power  
River Supply Conduit (RSC) Project  
(Lower Reach)**

**January 12, 2005**

*Prepared For:*

**Aspen Environmental Group**  
30423 Canwood Street, Suite 215  
Agoura Hills, California 91301

*Prepared by:*

 **Katz, Okitsu & Associates**  
*Traffic Engineers and Transportation Planners*  
1055 Corporate Center Drive, Suite 300  
Monterey Park, California 91754-7668  
phone: (323) 260-4703  
Fax: (323) 260-4705

JA3164

**INTENTIONALLY LEFT BLANK**

# Table of Contents

<b>1. INTRODUCTION .....</b>	<b>1</b>
PURPOSE .....	1
BACKGROUND .....	1
CONSTRUCTION METHODS .....	2
PROPOSED CONSTRUCTION SCHEDULE, PLANNING AND LABOR FORCE .....	3
STAGING AREAS .....	4
CONSTRUCTION SITES .....	4
PIPELINE CONSTRUCTION METHODS .....	5
TRAFFIC ANALYSIS METHODOLOGY .....	9
<b>2. ROAD CLOSURES DURING CONSTRUCTION .....</b>	<b>10</b>
<b>3. ROUTE ANALYSIS - PROJECT UNIT 1A AND UNIT 1B .....</b>	<b>11</b>
PROJECT DESCRIPTION .....	11
DESCRIPTION OF AFFECTED ROADWAYS .....	11
PROPOSED CONSTRUCTION METHODS .....	17
TRAFFIC FLOW AND ANALYSIS .....	17
POTENTIAL TRANSIT LINE IMPACTS .....	18
<b>4. ROUTE ANALYSIS – PROJECT UNIT 2 .....</b>	<b>19</b>
PROJECT DESCRIPTION .....	19
DESCRIPTION OF AFFECTED ROADWAYS (WESTERN HERITAGE WAY) .....	19
PROPOSED CONSTRUCTION METHODS .....	20
TRAFFIC FLOW AND ANALYSIS .....	20
POTENTIAL TRANSIT LINE IMPACTS .....	20
<b>5. ROUTE ANALYSIS – PROJECT UNIT 3 .....</b>	<b>22</b>
PROJECT DESCRIPTION .....	22
DESCRIPTION OF AFFECTED ROADWAYS .....	22
PROPOSED CONSTRUCTION METHODS .....	26
TRAFFIC FLOW ISSUES .....	26
POTENTIAL TRANSIT LINE IMPACTS .....	26
<b>6. ROUTE ANALYSIS – PROJECT UNIT 4 .....</b>	<b>28</b>
PROJECT DESCRIPTION .....	28
DESCRIPTION OF AFFECTED ROADWAYS .....	28
DESCRIPTION OF AFFECTED ROADWAYS .....	30
PROPOSED CONSTRUCTION METHODS .....	33
TRAFFIC FLOW ANALYSIS .....	33
POTENTIAL TRANSIT LINE IMPACTS .....	33
<b>7. CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>35</b>
ROADWAY CAPACITY ANALYSIS .....	35
PEDESTRIAN, TRANSIT AND PARKING IMPACTS .....	35
GENERAL IMPACTS TO ROADWAY FACILITIES AND TRANSIT SERVICE .....	35
RECOMMENDED TRAFFIC CONTROL DESIGN CONSIDERATIONS .....	36

## List of Figures

---

FIGURE 1 – RIVER SUPPLY CONDUIT LOWER REACH	2
FIGURE 2 – UNITS 1 AND 2 PROJECT ROUTE	12
FIGURE 3 – TRANSIT ROUTES ALONG UNITS 1A AND 1B	18
FIGURE 4 – TRANSIT ROUTES ALONG UNIT 2	21
FIGURE 5 – UNIT 3 PROJECT ROUTE	23
FIGURE 6 – TRANSIT ROUTES ALONG UNIT 3	26
FIGURE 7 – UNIT 4 PROJECT ROUTE	29
FIGURE 8 – TRANSIT ROUTES ALONG UNIT 4	34

## List of Tables

---

TABLE 1 – PROPOSED PROJECT SCHEDULE	3
TABLE 2 – PERSONNEL, EQUIPMENT AND REFUELING REQUIREMENTS	4
TABLE 3 – SUMMARY OF POTENTIAL TRENCHING ROADWAY CLOSURES FOR UNITS 1A, 1B, 2, 3 AND 4	10
TABLE 4 – PROPOSED PROJECT UNIT 1 CONSTRUCTION METHODS	17
TABLE 5 – PROPOSED PROJECT UNIT 2 CONSTRUCTION METHODS	20
TABLE 6 – PROPOSED PROJECT UNIT 3 CONSTRUCTION METHODS	26
TABLE 7 – PROPOSED PROJECT UNIT 4 CONSTRUCTION METHODS	33

# 1. Introduction

---

## *Purpose*

This document is intended to identify the roadway segments that will be impacted by Los Angeles Department of Water and Power's (LADWP) proposed River Supply Conduit (RSC) Project (proposed project) – Lower Reach Segment and to assess the traffic circulation impacts that would occur during construction.

## *Background<sup>1</sup>*

The RSC is a major transmission pipeline in the LADWP water distribution system. Built in the 1940s, the existing RSC pipeline's purpose is to transport large amounts of water from the Los Angeles Reservoir Complex and local ground water wells to reservoirs and distribution facilities located in the central areas within the City of Los Angeles (City). Approximately 60,000 feet in length, the existing RSC pipeline begins at the North Hollywood Pumping Station (NHPS) and ends at the Ivanhoe Reservoir. Hollingsworth Spillway is located about midpoint along the pipeline and is used to control the pressure of the downstream pipeline.

The section of pipe north of Hollingsworth Spillway is referred to as the Upper Reach, while the section south is referred to as the Lower Reach. Various pipe sizes and material types were used to construct the existing RSC pipeline. For the Upper Reach, 98% of the pipeline is reinforced concrete pipe, with the remainder being steel. For the Lower Reach, 88% is un-reinforced concrete pipe with the remainder of the pipeline being divided between reinforced concrete and steel.

The pipe pressure ratings vary as well, with sections of pipe that are subject to pressures greater than those recommended by the pipe manufacturer. Over the years, the RSC pipeline has experienced cases of pipe leaks. For example, in 2001, pipe joints near the intersection of Los Feliz Boulevard and Riverside Drive were repaired using an internal seal system. Although the leaks were stopped, the seals were only intended to be a temporary measure. Additionally, sections of the RSC pipeline are either unpressurized or are at very low pressures. As such, these pipelines are below the current requirements of the California Department of Health Services Drinking Water Regulations [Title 22, Section 64566(c)], which require "water mains to be designed to have at least 5 psig pressure throughout any buried length of the main except when the main is removed from service for repairs or maintenance". These minimum pressures help to prevent cross-contamination from other buried utilities, in particular, sanitary sewer. Furthermore, in order to meet state and federal water quality regulations, the LADWP is currently proposing to remove the Silver Lake Reservoir Complex, including both Silver Lake and Ivanhoe Reservoirs, which are destinations for the existing RSC, from direct service to the LADWP water distribution system. Water storage currently provided by the Silver Lake Reservoir Complex would be replaced by a 110 million gallon underground covered storage reservoir at the former Headworks Spreading Grounds site. An EIR is being prepared for this project, the Silver Lake Reservoir Complex Storage Replacement Project, by the LADWP. Information for this project is available at the following website: [www.ladwp.com/ladwp/cms/ladwp004720.pdf](http://www.ladwp.com/ladwp/cms/ladwp004720.pdf).

---

<sup>1</sup> Admin. Draft EIR Lower Reach River Supply Conduit Project, January 2005.



Figure 1 shows the pipeline segments that will be constructed in the Lower Reach as part of this project.

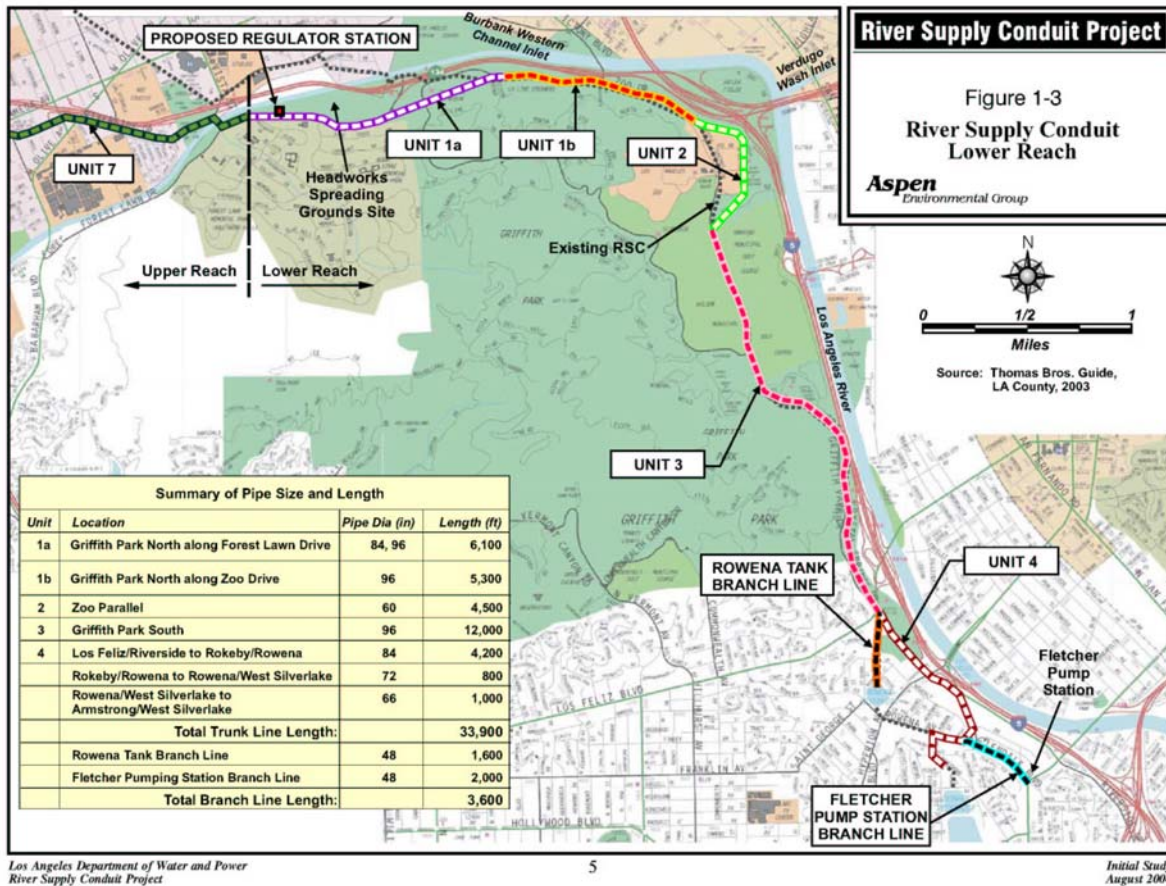


FIGURE 1 – RIVER SUPPLY CONDUIT LOWER REACH

**Construction Methods**

Construction of the proposed project would primarily use the open-trench method, except at busy intersections where the proposed RSC pipeline would be installed using the jacking method. In sequence, the general process for the construction methods consists of site preparation, excavation, pipe (and/or appurtenant structure) installation and backfilling, and street restoration (where applicable).

It is estimated that a typical construction spread would require the closure of three travel lanes. Intersections where open trench construction is used would be affected for approximately four weeks with turning traffic affected considerably longer. All three construction methods would require off-site staging area(s) to temporarily store supplies and materials. Contractors would be responsible for scouting and securing suitable local lots for staging areas. However, possible staging areas identified for the proposed project include various City-owned lots in Griffith Park, or at local LADWP facilities, such as the Silver Lake Reservoir Complex.

### ***Proposed Construction Schedule, Planning and Labor Force<sup>2</sup>***

As shown in Table 1, construction of the proposed project would be expected to commence in August 2005 and would be completed by February 2009, for a total of 42 months (3.5 years).

<b>Unit</b>	<b>Start Date</b>	<b>Completion Date</b>	<b>Estimated Duration (Days)</b>
1a <sup>a</sup>	January 2007	September 2008	423
1b	February 2006	April 2007	310
2	January 2008	February 2009	290
3	August 2005	December 2007	600
4	August 2005	November 2007	570

Note(s):

- a. Proposed regulator station to be constructed as part of Unit 1a.

Approximately 50 percent of the workforce would be skilled labor, and 50 percent would be unskilled labor, as shown in Table 2. During the peak construction period, four open trench and three jacking operations are anticipated to occur simultaneously over four pipeline units (e.g. Units 1a, 1b, 3, and 4). Therefore, approximately 100 personnel (22 employees times four open trench activities, plus four employees multiplied by three jacking operations) would be employed on the project during the peak construction period. On a typical workday, workers would travel directly to one of the predetermined staging areas, where they would gather equipment and proceed in work crews to the construction sites along the alignment. Construction activities would involve several (up to 83 assuming a 1.2 rideshare/other transportation factor) construction worker vehicles traveling daily to and from the proposed pipeline alignment from the nearest LADWP facility. Additional truck trips would be needed to transport unused excavated soil from trenching to an appropriate facility for reuse or ultimate disposal.

Construction would generally occur between 7:00 a.m. and 6:00 p.m. Monday through Friday (10-hour work day) and 8:00 a.m. to 5:00 p.m. on Saturdays (8-hour work day). Within Griffith Park, on Crystal Springs Drive where the road is open to two-way traffic, construction would be limited to nighttime hours only. Day and/or night construction (up to 24 hours per day with Police commission approval) would occur within Griffith Park along Crystal Springs Drive, where the road is open to only one-way traffic, since the lower portion of Crystal Springs Drive would be entirely closed throughout construction within that area (Department of Recreation and Parks approval would be required). Installation of pipe would be expected to progress at approximately 120 to 160 feet per day in this area, assuming a 24-hour construction schedule. It is estimated that a typical construction activity would require the closure of three travel lanes. Intersections where open trench construction is used would be affected for approximately four weeks with turning traffic affected considerably longer.

<sup>2</sup> Admin. Draft EIR Lower Reach River Supply Conduit Project, January 2005.

**Table 2 – Personnel, Equipment and Refueling Requirements**

Activity	Personnel		Equipment Quantity	Type	Refueling			
	Skilled	Unskilled						
Open Trench	11	11	5	Pickups	Off-site			
			1	Service trucks	Off-site			
			1	Backhoe	Off-site			
			6	Dump trucks	Off-site			
			1	Welding trucks	Off-site			
			1	Pitman	Off-site			
			1	Crane	Off-site			
			1	Wheel loader	Off-site			
			1	Compactor	Off-site			
			1	Fork Lift	Off-site			
			1	Water truck	Off-site			
			1	Excavator	Off-site			
			Jacking	2	2	2	Pickups	Off-site
						1	Dump trucks	Off-site
1	Excavator	Off-site						
Tunneling	2	4	1	Crane	Off-site			
			2	Pickups	Off-site			
			1	Dump Trucks	Off-site			
			1	Excavator	Off-site			
Pipe Delivery (40ft/load)	2	0	1	Crane	Off-site			
			2	Trailer Truck	Off-site			

### ***Staging Areas***<sup>3</sup>

During pipeline construction, LADWP's construction contractor would establish temporary yard locations for staging and storage of miscellaneous construction materials and equipment. The contractor(s) would be responsible for scouting and securing suitable local lots for staging areas. However, possible staging areas identified for the proposed project include various City-owned lots within Griffith Park, or at local LADWP facilities, such as the Silver Lake Reservoir Complex. During all phases of construction, refueling and lubrication of construction equipment would occur at the contractors' staging yard or along the construction right-of-way. Equipment would be regularly checked for leakage.

### ***Construction Sites***<sup>4</sup>

Most of the heavy construction equipment would be delivered on lowboy trucks or trailers. Mobile cranes and dump trucks would be driven in from local contractors' yards. Construction equipment would be left overnight at the site as feasible, at the contractor yards, or at other storage yards in the area. All equipment would be lubricated, refueled, and repaired by the contractor or local servicing companies. All construction materials would proceed to the construction areas by truck on existing roadways. For pipe delivery by truck, it is assumed that

<sup>3</sup> Admin. Draft Lower Reach River Supply Conduit Project, January 2005.

<sup>4</sup> Admin. Draft Lower Reach River Supply Conduit Project, January 2005.

each truck would carry 40-feet of pipe. Materials that would be truck transported to the site would include: the pipe sections, pipe fittings, valve assemblies, and shoring materials; welding materials; cement, aggregate, gravel, sand, and slurry (from local plants) for backfill at street crossings; asphalt for re-paving; signs and fencing; fuel and lubrication for equipment; drinking water; and water for dust control. Alternatively, water may be available from fire hydrants or permitted water sources in the project area for hydrotesting and dust control. The amounts of each material needed would depend on the location and construction activity.

### ***Pipeline Construction Methods<sup>5</sup>***

#### **Open Trench Excavation**

Open trench excavation is a construction method typically utilized to install pipelines and their appurtenant structures, which include maintenance holes, flow meters, valves, and vaults. In general, the process consists of site preparation, excavation and shoring, pipe installation and backfilling and site restoration (where applicable). The proposed project would be phased in work areas and each work area would typically vary between 800 and 1,000 feet. Construction usually progresses along the alignment with the maximum length of open trench at one time being approximately 500 feet in length with traffic detours beginning at least 200 feet on either side of the designated work area. The following is a description of the phases of construction for open trenching:

*Site Preparation.* Traffic control plans, where necessary, are first prepared in coordination with the City of Los Angeles to detour and delineate the traffic lanes around the work areas. The approved plans are then implemented. The existing pavement along the pipeline alignment is cut with a concrete saw or otherwise broken and then removed using jackhammers, pavement breakers, and loaders. Other similar equipment may be used. The pavement is removed from the project site and recycled, reused as a backfill material, or disposed of at an appropriate facility.

*Excavation and Shoring.* A trench is excavated along the pipeline alignment using backhoes, excavators, or other types of excavation equipment. Portions of the trench adjacent to some utilities may be manually excavated. The excavated soil may be temporarily stored in single rows adjacent to the trenches, stored at off-site staging areas, or immediately hauled off-site. As the trench is excavated, the trench walls are supported, or shored, typically with hydraulic jacks or trench boxes. Steel or wood sheeting between H-beams (e.g., beam and plate) may also be used for shoring. Other similar shoring methods may be utilized. Utilities not relocated prior to trenching are supported as excavation and shoring occurs. If construction occurs in areas with high groundwater, the groundwater would be removed during the excavation of trenches, usually by pumping it from the ground through dewatering wells that have been drilled along the alignment. The extracted groundwater would first be treated for any contaminants, if present, before being discharged to the storm drain system under a permit issued by the Regional Water Quality Control Board.

*Pipe Installation and Backfilling.* Once the trench has been excavated and shored, pipe laying begins. Bedding material (such as sand or slurry) would be placed on the bottom of the trench. Pipe

---

<sup>5</sup> Admin. Draft Lower Reach River Supply Conduit Project, January 2005.

segments would then be lowered into the trench and placed on the bedding. If pipeline segments used do not include push-on joints, the segments would be welded to one another at the joints. The rate at which pipe may be installed in a single day varies, but is estimated to be installed at a rate of approximately 80 feet per day for the proposed project. Prior to backfilling, appurtenant structures would be installed as necessitated by design. After laying and attaching the pipe segments, the trench is immediately backfilled with native soils, crushed miscellaneous bases, or cement slurry. Not more than 500 feet of trench or the amount of the trench that can be backfilled in one day is left unbackfilled.

*Site Restoration.* Any portion of the roadway damaged as a result of construction activities will be repaved and restored in accordance with all applicable City of Los Angeles standards. Once the pavement has been restored, traffic delineation (restriping) will also be restored.

### **Jacking Method**

Pipe-jacking is utilized when open-trenching is not feasible, to avoid large substructure utilities, or to avoid the disruption of other facilities such as busy intersections. Although the installation of pipelines using jacking techniques avoids the continuous surface disruption common to open-trench construction, some surface disruption is unavoidable because jacking and receiving pits are required and may be located in street rights-of-way.

Pipe-jacking is an operation in which the soil ahead of the steel casing is excavated and brought out through the steel casing barrel while the casing is pushed forward by a horizontal, hydraulic jack which is placed at the rear of the casing. The jacking equipment utilized for this operation is placed in the jacking pit. Once the casing is placed, the pipe is installed inside the casing. As with open trench excavation, the four primary phases for pipe-jacking are site preparation, excavation and shoring, pipe installation, and site restoration.

*Site Preparation.* Traffic control plans, where necessary, are first prepared in coordination with the City of Los Angeles, to detour and delineate the traffic lanes around the work areas and then implemented. In preparing to construct the jacking and receiving pits, the pavement is first cut using a concrete saw or pavement breaker. As with open-trench excavation, the pavement is removed from the project site and recycled, reused as a backfill material, or disposed of at an appropriate facility.

*Excavation and Shoring.* A jacking pit and a receiving pit are generally used for each jacking location, one at each end of the pipe segment. The distance between the pits typically ranges from 250 to 500 feet, but may be longer or shorter depending on site conditions. For the proposed project, the size of the jacking and receiving pit for the Lower Reach pits would be approximately 20-40 feet long, 11-18 feet wide, and 25-45 feet deep. The pits are excavated with backhoes, cranes, and other excavation equipment. The excavated soil is immediately hauled away. As excavation occurs, the pits are shored utilizing a beam and plate shoring system.

*Pipe Installation.* Once the pits are constructed and shored, a horizontal hydraulic jack is placed at the bottom of the jacking pit. The steel casing (Lower Reach: 78-, 96-, 108-, and 120-inch internal diameter) is lowered into the pit with a crane and placed on the jack. A simple cutting shield is placed in front of the pipe segment to cut through the soil more easily. As the jack pushes the steel



casing and cutting shield into the soil, soil is removed from within the leading casing with an auger or boring machine, either by hand or on a conveyor. Once the segment has been pushed into the soil, a new segment is lowered, set in place, and welded to the casing that has been pushed. Installation of the steel casing is expected to progress at approximately 40 feet per day for auger-bored jacked casing. Once the casing has been installed, the carrier pipe (Lower Reach: 66-, 84-, and 96-inch diameter) is then lowered and placed on the jacks, which push the pipe into the steel casing. Installation of carrier pipe is expected to progress at approximately 40 to 60 feet per day.

*Site Restoration.* After completion of the pipe installation along the jacking location, the shoring system is disassembled as the pits are backfilled, the soil compacted and the pavement above replaced. Once the pavement has been restored, traffic delineation (restriping) will also be restored.

## **Tunneling**

For the purposes of this discussion, tunneling includes both micro-tunneling and traditional tunneling. These tunneling methods are described below.

### ***Micro-Tunneling***

Micro-tunneling involves the installation of pipeline segments concurrent with the excavation of the tunnel via a horizontal jacking machine. A tunneling machine with directional controls (sophisticated boring head or cutting shield) is utilized to excavate the tunnel directly in front of the pipeline segment. Although the name implies small diameter pipe installations, micro-tunneling is used to install pipelines up to 72 inches in diameter or more. Micro-tunneling is comprised of the excavation of access shafts, the installation of the pipeline, and the closing of the shafts.

*Shaft Excavation.* Two shafts are generally used for each section of pipeline to be installed by micro-tunneling, one at each end of the alignment. Long tunneling projects may require additional shafts along the alignment. When this is the case, the distance between the shafts typically ranges from 300 feet to 400 feet, but may be longer or shorter depending on site conditions. In general, the size of the access shaft openings is proportional to the size of the pipeline that is being installed. The pits are excavated with backhoes, cranes, and other excavation equipment. The excavated soil is immediately hauled away. As excavation occurs, the pits are shored utilizing a beam and plate shoring system.

*Pipeline Installation.* Once the shafts are constructed, a horizontal hydraulic jack is placed at the bottom of one of the shafts and a pipe segment placed in the jack. A tunneling boring machine (cutting head) which is the same diameter or slightly larger than the pipeline is placed in front of the pipe segment and is hydraulically pushed against the shaft wall. As the tunnel boring machine cuts horizontally into the wall of the shaft, soil is pumped in slurry form (water mixes with the soil spoils in the shield) via flexible hoses to a settling basin where the solids settle out and the water reused. When the first pipe segment is flush with the shaft wall, the slurry hoses are disconnected and the next pipe segment lowered into the shaft. The slurry hoses are routed through the second pipe segment, which is then jacked behind the first segment. The proper slope is maintained through the use of a laser, which is mounted in the jacking shaft and focused on a

grid plate at the back of the tunnel boring machine. The tunneling direction is remotely controlled using the laser mark on the grid plate to guide its direction. This process is repeated until the tunnel boring machine and pipeline reach the second shaft. Installation of the steel casing is expected to progress at approximately 64 feet per day for tunnel boring, assuming the use of a closed-face tunnel boring machine in sandy soil.

*Site Restoration.* After completion of the pipe installation along the micro-tunneling alignment, the shoring system is disassembled as the pits are backfilled, the soil compacted and the pavement above replaced. Once the pavement has been restored, traffic delineation (restriping) will also be restored.

### ***Traditional Tunneling***

Traditional tunneling involves the placement of the pipeline in an underground tunnel, which is excavated between two or more shafts. Traditional tunneling consists of the excavation of shafts, the excavation of tunnels, the installation of the pipeline, and site restoration.

*Shaft Excavation.* Two or more shafts are constructed as described previously for pipe-jacking and micro-tunneling.

*Tunnel Excavation.* Once the access shafts are excavated and shored, a tunnel is excavated between the shafts. Excavation of the tunnel occurs either with the use of a tunnel shield or manually with small power tools. In large tunnels, rail cars or augers are typically used to transport the excavated soil to one of the shafts. Manual excavation is typically used for shorter tunnels. As the excavation progresses, tunnel supports are constructed, assembled, and installed to prevent the tunnel from caving in. The removed soil is reused, recycled, or hauled away to a disposal site or staging area. The tunneling process proceeds until a fully supported tunnel has been constructed. Typical tunnel supports include beams and boards or pre-cast concrete linings. Beams and boards usually consist of wooden frames (beams) regularly spaced within the tunnel. Boards are positioned between each frame to support the soil above. Support linings, which have been pre-cast with reinforced concrete, are lifted into the proper position and bolted or otherwise fixed in place. Installation of tunnel liner (i.e., rib and lagging) is expected to progress at a maximum rate of 20 feet per day.

*Pipe Installation.* The pipeline is installed in segments following completion of the tunnel. Each pipe segment is lowered into the pit with cranes or other loading equipment, mechanically pushed, carried, or hauled into the proper position within the tunnel, and placed on wood blocks or other supports that allow for adjustments in the pipe's alignment. The joints of adjoining pipe segments are sealed as pipe placement occurs. Once the entire length of pipe has been placed in the proper position and the joints sealed, the annular space between the pipe and the tunnel wall (supports) is completely filled with grout or concrete and allowed to cure. Installation of pipe is expected to progress at a rate of approximately 40 to 60 feet per day.

*Site Restoration.* After completion of the pipe installation along the tunneling alignment, the shoring system is disassembled as the pits are backfilled, the soil compacted and the pavement above replaced. Once the pavement has been restored, traffic delineation (restriping) will also be restored. During construction, fugitive dust emissions at the construction site during

earthmoving operations would be controlled as needed by water trucks equipped with spray nozzles. Spoils from cuts, including cuts in streets, would typically be used as backfill materials at the site of origin. Materials unsuitable for backfill use and economically not usable for other purposes would be disposed of in accordance with local and county guidelines in available landfills. It is possible that contaminated soil would be excavated during construction, especially in older industrial areas with shallow groundwater. Soil that cannot be returned as backfill would be disposed of or treated at an appropriate permitted facility.

### ***Traffic Analysis Methodology***

The proposed River Supply Conduit Pipeline (Project) – Lower Reach Segment was analyzed by Project segment, defined by the unit numbers described within this document. The traffic study methodology was developed in consultation with the City of Los Angeles Department of Transportation. General traffic conditions were analyzed on roadways where the project would be constructed.

As detailed construction and closure plans for the project are not yet available, analysis was not conducted of specific intersections or specific project segments. Capacity will be constricted, in some form, along each Project segment during construction.

Typical traffic impact mitigation measures would not be available for impacts caused by Project construction. The need for manual traffic control, detours, and roadway/approach closures would be defined through traffic plans developed for each construction segment. These plans would be reviewed by the City prior to implementation along the Project corridor. True mitigations would not be achieved along the Project construction areas, as capacity cannot be restored until construction is completed.

Traffic conditions and general issues along the proposed Project corridor are discussed in the following sections. Impacts are discussed at a macro level, for each defined Project segment.



## 2. Road Closures during Construction

This section of the report serves to identify the construction intensity within each Project Unit. At the time this assessment was performed, the actual location of the required trenching and tunneling within the identified roadways was not defined. Obviously, open trench construction will have the greatest traffic circulation impact. As discussed in the project description, it is assumed that trenching operations will require a “spread” of approximately three travel lanes (approximately 30 to 36 feet).

Table 3 identifies potential lane and roadway closures that would be required for trenching construction within these units.

**Table 3 – Summary of Potential Trenching Roadway Closures  
for Units 1a, 1b, 2, 3 and 4**

<b>Street Segment</b>	<b>Potential Roadway Impact</b>
Griffith Park North along Forest Lawn Drive (West Project Limit to Zoo Drive)	Reduction to one or two total travel lanes.
Griffith Park North along Zoo Drive (L.A. Live Steamers to North Zoo Drive)	Potential complete street closure
Zoo Parallel Line (Western Heritage Way)	Potential complete street closure
Griffith Park South (Crystal Springs Drive from Griffith Park Drive to Los Feliz Boulevard)	This segment of roadway is a four-lane divided roadway. If the pipeline is located in the median area, then only minor closure may be required. If the pipeline is located either the northbound or southbound lanes, then traffic can be reduced to one lane in each direction and utilize the northbound or southbound roadway, depending on which roadway requires closure.
Riverside Drive between Los Feliz Boulevard and Glendale Boulevard	This section of roadway has four lanes, left-turn lanes and a wide curb lane. At least two-lane could be maintained during construction.
Glendale Boulevard from Riverside Drive to Rokeby Street	This section of roadway is comprised of four relatively narrow lanes. Trenching on this portion of roadway would require street closure.
Roadways south of Rokeby Street	Trenching on these roadways would require street closure.

### **3. Route Analysis - Project Unit 1a and Unit 1b**

---

#### ***Project Description***

Project Unit 1a consists of approximately 6,000 linear feet of 96-inch diameter pipe and a pressure-regulating station. Project Unit 1b will consist of approximately 5,300 linear feet of 96-inch diameter pipe.

The route would be as follows:

- Unit 1a – From the west end of the Headworks Spreading Grounds site along Forest Lawn Drive, to the proposed regulator station, and continuing along Forest Lawn Drive and Zoo Drive to the L.A. Live Steamers (railroad restoration and model exhibit).
- Unit 1b - From L.A. Live Steamers along Zoo Drive to a location 1,800 feet north of the northerly end of Western Heritage Way.

The route of Project Units 1 and 2 is illustrated in Figure 2.

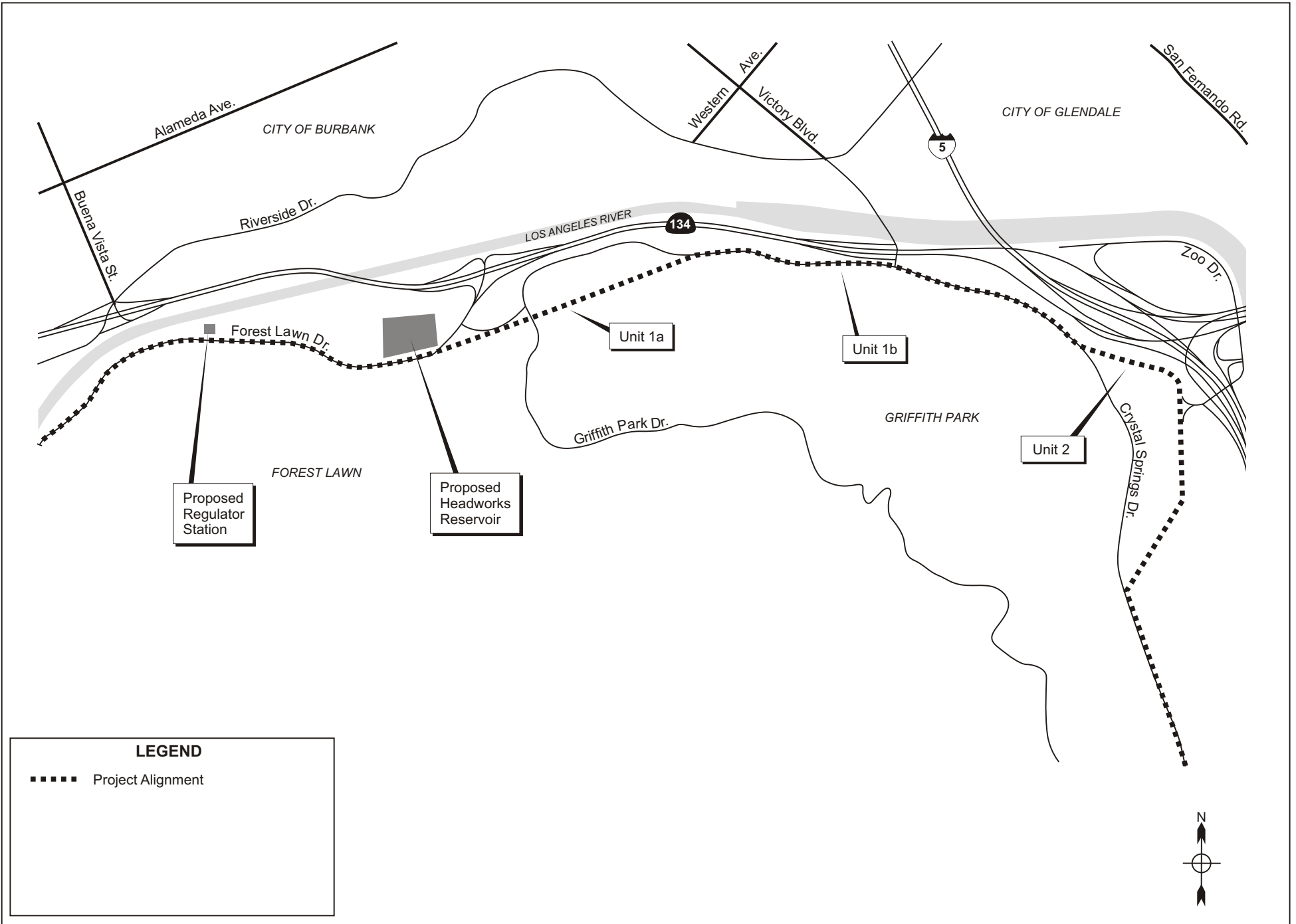
#### ***Description of Affected Roadways***

The following section describes the roadways along the proposed pipeline route from west to east.

##### **Forest Lawn Drive to Zoo Drive**

At the western project limit, Forest Lawn Drive is a four-lane roadway with a paved bike lane and shoulder as shown in Photographs 1, 2, 3 and 4. As Forest Lawn Drive approaches Zoo Drive moving eastward, Forest Lawn Drive narrows to become a two-lane roadway with a paved shoulder as shown in Photographs 5 and 6. Photograph 6 also shows the exclusive right-turn lane from Forest Lawn Drive to Zoo Drive.

As seen in Photograph 3, the Forest Lawn Drive/Mt. Sinai Drive intersection within this segment is controlled by a traffic signal.



**LEGEND**

----- Project Alignment





Photograph 1 - Looking west along the south side of Forest Lawn Drive from near the west project limit



Photograph 2 - Looking east along the south side of Forest Lawn Drive from near the west project limit



Photograph 3 - Looking west along the south side of Forest Lawn Drive toward Mt. Sinai Drive



Photograph 4 - Looking east along the south side of Forest Lawn Drive from just east of Mt. Sinai Drive



Photograph 5 - Looking west along the south side of Forest Lawn Drive from west of Zoo Drive



Photograph 6 - Looking east along the south side of Forest Lawn Drive from west of Zoo Drive



**Zoo Drive from Forest Lawn Drive to Griffith Park Drive**

Zoo Drive forms a “T” intersection with Forest Lawn Drive to the west and Griffith Park Drive to the east as shown in Photographs 7, 8, 9 and 10. At the Zoo Drive/Griffith Park Drive intersection, Zoo Drive forms the west and north legs of the intersection. Between Forest Lawn Drive and Griffith Park Drive, Zoo Drive is two-lane roadway with a paved median and paved shoulders.

As shown in Photograph 7, the Zoo Drive/Forest Lawn Drive is controlled by a traffic signal.



Photograph 7 - Looking west along the south side of Zoo Drive toward Forest Lawn Drive



Photograph 8 - Looking east along the south side of Zoo Drive from just east of Forest Lawn Drive



Photograph 9 - Looking west along the south side of Zoo Drive from just west of Griffith Park Drive



Photograph 10 - Looking east along the south side of Zoo Drive toward Griffith Park Drive

**Zoo Drive between Griffith Park Drive and North Zoo Drive**

Zoo Drive is a two-lane roadway with a paved shoulder between Griffith Park Drive and North Zoo Drive as shown in Photographs 11, 12, 13, 14, 15, 16 and 17. Within this roadway segment, Zoo Drive intersects Riverside Drive and North Zoo Drive. The Zoo Drive/Riverside Drive and Zoo Drive/North Zoo Drive intersections are controlled by stop signs on all legs of the intersection.



Photograph 11 - Looking south along the east side of Griffith Park Drive/Zoo Drive just west of the Travel Town Museum



Photograph 12 - Looking north along the east side of Zoo Drive from just north of the Zoo Drive/Griffith Park Drive intersection



Photograph 13 - Looking east along the south side of Zoo Drive from just west of Riverside Drive



Photograph 14 - Looking west along the south side of Zoo Drive toward Riverside Drive



Photograph 15 - Looking north across Zoo Drive toward the southern terminus of Riverside Drive



Photograph 16 - Looking east along the south side of Zoo Drive from east of Riverside Drive



Photograph 17 - Looking west along the south side of Zoo Drive from west of Riverside Drive

**Zoo Drive between North Zoo Drive and the Eastern Project Limit**

Between North Zoo Drive and the eastern project limit, Zoo Drive is a four-lane roadway as shown in Photographs 18 and 19.





Photograph 18 - Looking northwest along the north side of Zoo Drive from east of North Zoo Drive



Photograph 19 - Looking southeast along the north side of Zoo Drive from east of North Zoo Drive

**Proposed Construction Methods**

Table 4 shows the proposed construction methods along proposed project Unit 1.

**Table 4 – Proposed Project Unit 1 Construction Methods**

Unit No.	Unit Details	Length (Feet)	Pipe Dia. (in)	Proposed Construction Method <sup>b</sup>
1a <sup>a</sup>	Griffith Park North along Forest Lawn Drive	6,000	96	Open Trench/Tunneling
1b	Griffith Park North along Zoo Drive	5,300	96	Open Trench

**Traffic Flow and Analysis**

Construction of the Project along Unit 1a and 1b will likely require complete closure of some segments of Zoo Drive within Griffith Park. Along the four-lane segment of Forest Lawn Drive, (west of Zoo Drive) construction will likely reduce the number of travel lanes to two. Left turn lane pockets, where provided, would be closed. Left turn movements would take place from through lanes, unless temporary pockets for left turn lanes are provided.

No major alternate routes are located in close proximity to Project Unit 1a and 1b. Riverside Drive, on the north side of SR-134, could be utilized as an alternate route to some extent. The relatively low traffic volumes along Forest Lawn Drive and Zoo Drive could generally be accommodated within a reduced number of travel lanes. Closures of Zoo Drive could affect access to the I-5 Southbound On-Ramp (via the Unit 2 Project segment) near the Gene Autry Museum of Western Heritage. For the most part, full closures of Zoo Drive would only affect local traffic within Griffith Park.



### Potential Transit Line Impacts

Figure 3 is a map plot of the Los Angeles County Metropolitan Transportation Authority (MTA) bus routes in the vicinity of Project Units 1a and 1b.



FIGURE 3 – TRANSIT ROUTES ALONG UNITS 1A AND 1B

The MTA map shows that there are no currently scheduled bus routes along the majority of the project route. MTA Route 96 on the east side of Unit 1b does traverse Victory Boulevard and Zoo Drive. Construction along the portion of Unit 1b could significantly impact MTA Route 96 travel times. The route could be rerouted to utilize State Route 134 and I-5 during construction. However, rerouting would potentially impact stops at Victory Boulevard/Alameda Street north of the site and at Riverside Drive/Los Feliz Boulevard south of the site and would eliminate transit access along this route to the Los Angeles Zoo.

Impacts to transit service would be likely along these segments during project construction. Temporary stop relocations/closures and line re-routing could be necessary based on the roadway width needed for Project construction. Turning movements could be restricted or closed, forcing re-routing from neighborhoods currently served by transit.

## 4. Route Analysis – Project Unit 2

---

### *Project Description*

Project Unit 2 would be approximately 4,500 linear feet long and 60 inches in diameter. The route would be as follows:

- From the southern end of Unit 1b to approximately 800 feet south of the southern end of Western Heritage Way, running in Western Heritage Way, other paved roads, and equestrian trails.

The route that would be utilized for Project Unit 2 is illustrated in Figure 3 shown in the previous chapter of this report.

### *Description of Affected Roadways (Western Heritage Way)*

Project Unit 2 runs generally along Western Heritage Way which is a two-lane local road within Griffith Park, as shown in Photographs 20, 21, 22 and 23.



Photograph 20 - Looking south from the south intersection of Western Heritage Way toward Zoo Drive



Photograph 21 - Looking north from just north of the southern Zoo Drive/Western Heritage Way intersection



Photograph 22 - Looking south along Western Heritage Way from further north of Zoo Drive



Photograph 23 - Looking north along Western Heritage Way from further north of Zoo Drive

**Proposed Construction Methods**

Table 5 shows the proposed construction methods along proposed project Unit 2.

**Table 5 – Proposed Project Unit 2 Construction Methods**

Unit No.	Unit Location	Length (Feet)	Pipe Dia. (in)	Construction Method
LOWER REACH				
2	Zoo Parallel (Western Heritage Way)	4,500	60	Open Trench

**Traffic Flow and Analysis**

Project Construction along Project Unit 2 could require either complete or partial closure of segments of Western Heritage Way within Griffith Park. An alternate route during construction would be the I-5 and SR-134 freeway via Los Feliz Boulevard. As construction along this Project Unit would not involve major roadways or significant traffic volumes, use of such an alternate route would only be necessary during complete roadway closures.

**Potential Transit Line Impacts**

Figure 4 is a map plot of the Los Angeles County Metropolitan Transportation Authority (MTA) bus routes in the vicinity of Project Unit 2.

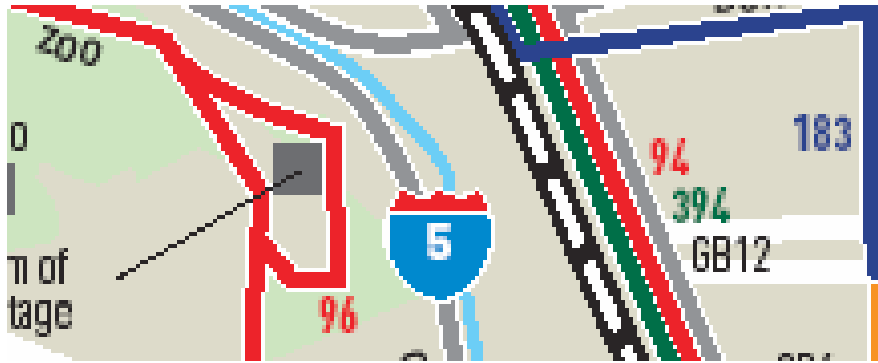


FIGURE 4 – TRANSIT ROUTES ALONG UNIT 2

Figure 4 shows that the construction along Unit 2 would directly impact MTA Line 96 access to the Los Angeles Zoo. There is a stop along MTA Line 96 at the Zoo. While MTA Line 96 could be rerouted during construction, the new route would not serve the Zoo stop and could impact the stops north and south of the Zoo.

Impacts to transit service would be likely along these segments during project construction. Temporary stop relocations/closures and line re-routing could be necessary based on the roadway width needed for Project construction. Turning movements could be restricted or closed, forcing re-routing from neighborhoods currently served by transit.

## 5. Route Analysis – Project Unit 3

---

### *Project Description*

Project Unit 3 consists of approximately 12,000 linear feet of 96-inch diameter pipe. The route would be as follows:

- From the southern end of Unit 2 to Los Feliz Boulevard, running in Crystal Springs Drive within Griffith Park

The route of Project Unit 3 is illustrated in Figure 5.

### *Description of Affected Roadways*

#### **Crystal Springs Drive to south of Griffith Park Drive**

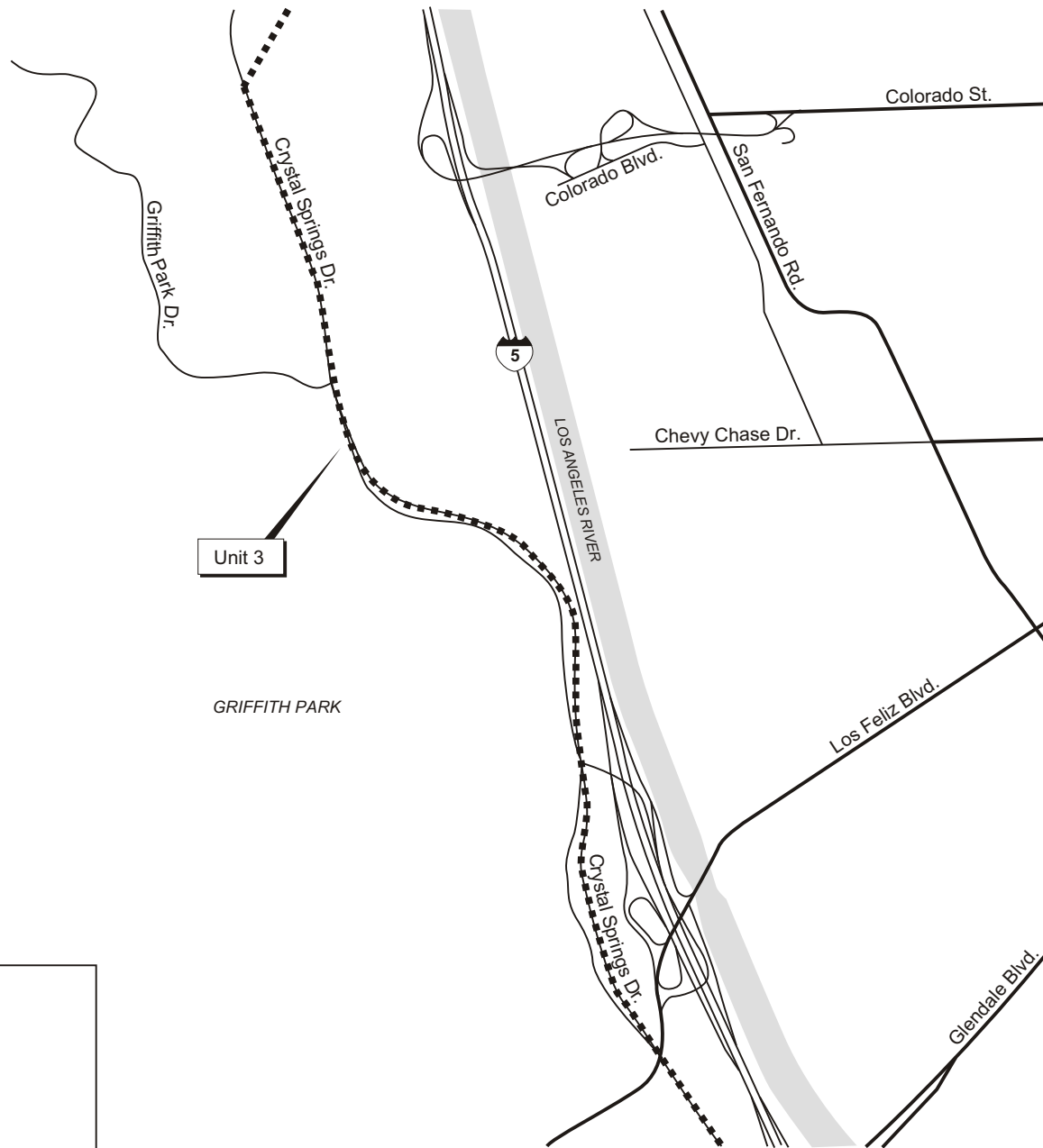
Zoo Drive becomes Crystal Springs Drive near North Zoo Drive. As shown in Photographs 24, 25, 26 and 27, Crystal Springs Drive is a two-lane north-south roadway.



Photograph 24 - Looking north along the west side of Crystal Springs Drive from south of the southern Zoo Drive/Western Heritage Way intersection



Photograph 25 - Looking south along the west side of Crystal Springs Drive from south of the southern Zoo Drive/Western Heritage Way intersection



**LEGEND**

----- Project Alignment







Photograph 26 - Looking north along the west side of Crystal Springs Drive from south of Griffith Park Drive



Photograph 27 - Looking south along the west side of Crystal Springs Drive from south of Griffith Park Drive

**Crystal Springs Drive from south of Griffith Park Drive to Los Feliz Boulevard**

South of Griffith Park Drive, Crystal Park Drive becomes a two-lane divided highway as shown in Photographs 28, 29, 30 and 31. Photographs 32, 33 and 34 show the Crystal Springs Drive/Los Feliz Boulevard intersection that serves as the southern boundary to this project segment/unit. The Crystal Springs Drive/Los Feliz Boulevard/Riverside Drive intersection is controlled by a traffic signal.



Photograph 28 - Looking north along the west side of Crystal Springs Drive south of Griffith Park Drive where Crystal Springs Drive becomes a four-lane divided roadway



Photograph 29 - Looking south along the west side of Crystal Springs Drive south of Griffith Park Drive where Crystal Springs Drive becomes a four-lane divided roadway



Photograph 30 - Looking east across Crystal Springs Drive the I-5 northbound ramps north of Los Feliz Boulevard



Photograph 31 - Looking north along the west side of Crystal Springs Drive from just north of Los Feliz Boulevard



Photograph 32 - Looking south along the west side of Crystal Springs Drive toward Los Feliz Boulevard



Photograph 33 - Looking south across the west leg of the Crystal Springs Drive/Los Feliz Boulevard intersection



Photograph 34 - Looking east from the northwest corner of the Crystal Springs Drive/Los Feliz Boulevard intersection



**Proposed Construction Methods**

Table 6 shows the proposed construction methods along proposed project Unit 3.

**Table 6 – Proposed Project Unit 3 Construction Methods**

Unit No.	Unit Details	Length (Feet)	Pipe Dia. (in)	Proposed Construction Method <sup>b</sup>
3	Griffith Park South (Crystal Springs Drive)	12,000	96	Open Trench/Jacking/Tunneling

**Traffic Flow Issues**

Construction along Project Unit 3 would require partial closures along segments of Crystal Springs Drive. Along most of this Unit, the roadway has a landscaped median. Partial construction closures would likely entail the use of one side of the roadway in a two-lane operation.

**Potential Transit Line Impacts**

Figure 6 is a map plot of the Los Angeles County Metropolitan Transportation Authority (MTA) bus routes in the vicinity of Project Unit 3.

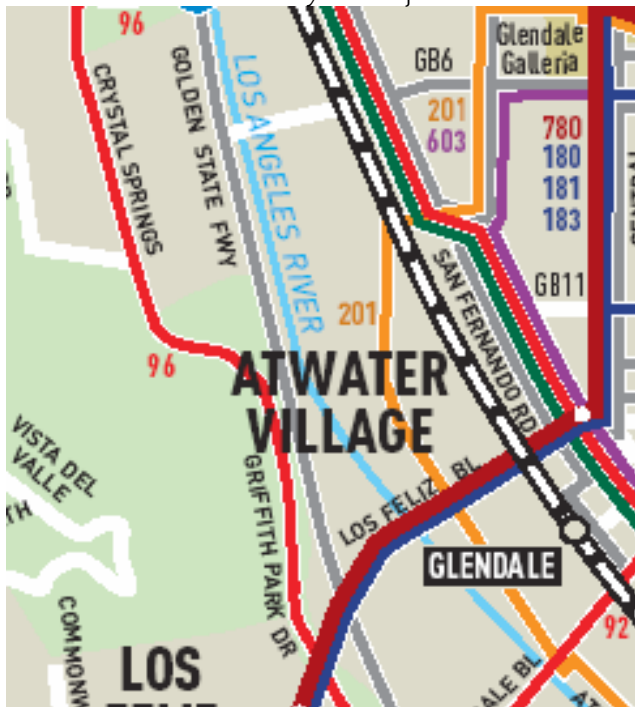


FIGURE 6 – TRANSIT ROUTES ALONG UNIT 3

Figure 6 illustrates that Project construction along Unit 3 would directly impact MTA Line 96, in a manner similar to that discussed for Units 1a, 1b and 2. While MTA Line 96 could be rerouted during construction, the new route would not serve the Zoo stop and could impact the stops north and south of the Zoo. It would be anticipated that construction would not affect through traffic on Los Feliz Boulevard and therefore transit routes along Los Feliz Boulevard would not be affected.

Impacts to transit service would be likely along these segments during project construction. Temporary stop relocations/closures and line re-routing could be necessary based on the roadway width needed for Project construction. Turning movements could be restricted or closed, forcing re-routing from neighborhoods currently served by transit.

## 6. Route Analysis – Project Unit 4

---

### *Project Description*

Project Unit 4 consists of approximately 4,200 linear feet of 84-inch pipe, 800 linear feet of 72-inch pipe, 1,000 linear feet of 66-inch pipe and 3,600 linear feet of 48-inch pipe.

- Los Feliz/Riverside to Rokeby/Rowena
- Rokeby/Rowena to Rowena/West Silver Lake
- Rowena/West Silver Lake to Armstrong/West Silver Lake

### Trunk Line Rowena Branch Line

- Los Feliz/Riverside to Rowena Tank

### Trunk Line Fletcher PS Branch Line

- Rokeby/Rowena to Fletcher

The route of Project Unit 4 is illustrated in Figure 7.

### *Description of Affected Roadways*

#### **Riverside Drive between Los Feliz Boulevard and Glendale Boulevard**

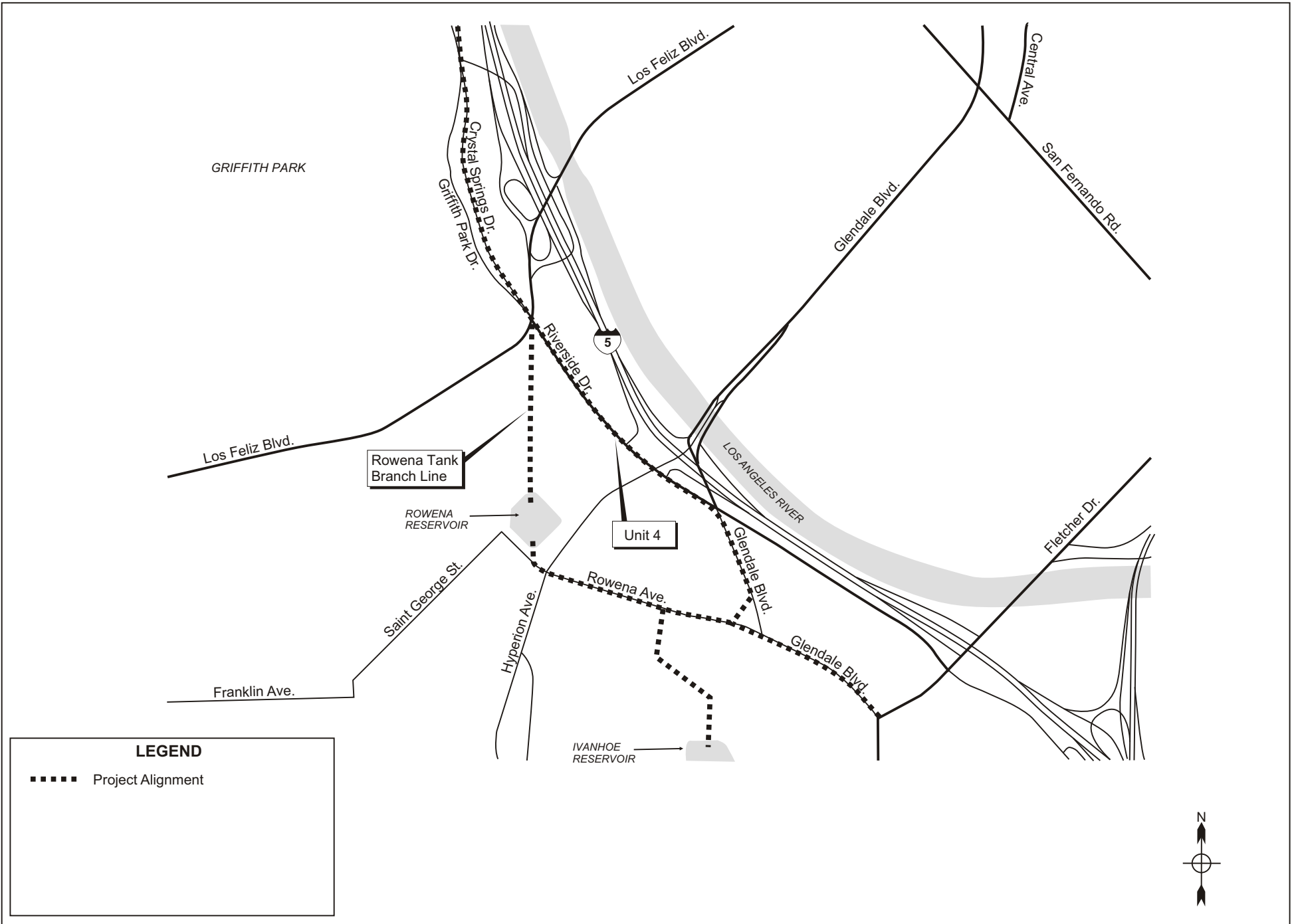
Crystal Drive becomes Riverside Drive south of Los Feliz Boulevard. As shown in Photographs 35, 36, 37 and 38, Riverside Drive is a four-lane north-south roadway with sufficient width to provide a paved median and provide for on-street parking.



Photograph 35 - Looking north along the west side of Riverside Drive toward Los Feliz Boulevard



Photograph 36 - Looking south along the west side of Riverside Drive from just south of Los Feliz Boulevard



**LEGEND**

----- Project Alignment

**Description of Affected Roadways**

**Riverside Drive between Los Feliz Boulevard and Glendale Boulevard**

Crystal Drive becomes Riverside Drive south of Los Feliz Boulevard. As shown in Photographs 35, 36, 37 and 38, Riverside Drive is a four-lane north-south roadway with sufficient width to provide a paved median and provide for on-street parking.



Photograph 35 - Looking north along the west side of Riverside Drive toward Los Feliz Boulevard



Photograph 36 - Looking south along the west side of Riverside Drive from just south of Los Feliz Boulevard



Photograph 37 - Looking north along the west side of Riverside Drive from just north of Glendale Boulevard



Photograph 38 - Looking south along the west side of Riverside Drive toward Glendale Boulevard



**Glendale Boulevard between Riverside Drive and Rokeby Street**

Moving southward, the proposed pipeline route turns from Riverside Drive to Glendale Boulevard. The pipeline follows Glendale Boulevard between Riverside Drive to the north and Rokeby Street to the south. As shown in Photographs 39 and 40, this segment of Glendale Boulevard provides for two lanes of traffic in each direction.



Photograph 39 - Looking northeast along the north side of Glendale Boulevard toward Riverside Drive



Photograph 40 - Looking southwest along the north side of Glendale Boulevard from just southwest of Riverside Drive

**Rokeby Street between Glendale Boulevard and Rowena Avenue**

Again moving southward, the proposed pipeline turns from Glendale Boulevard to Rokeby Street. The proposed pipeline route then follows the short roadway segment along Rokeby Street to Rowena Avenue. Photographs 41 and 42 show this roadway segment that provides both one lane of traffic in each direction and on-street parking. The intersections of Rokeby Street with Glendale Boulevard and Rowena Avenue are controlled by stop signs on Rokeby Street.



Photograph 41 - Looking northeast along the west side of Rokeby Street toward Glendale Boulevard



Photograph 42 - Looking southwest along the west side of Rokeby Street toward Rowena Avenue

**Rowena Avenue between Rokeby Street and West Silver Lake Drive**

At the southern terminus of Rokeby Street, the proposed pipeline will turn west along a short segment of Rowena Avenue to West Silver Lake Drive. Photographs 43 and 44 show this roadway segment that provides for two lanes of traffic in each direction and on-street parking. The Rowena Avenue/West Silver Lake Drive intersection is controlled by a traffic signal.



Photograph 43 - Looking east along the north side of Rowena Avenue toward Rokeby Street



Photograph 44 - Looking west along the north side of Rowena Avenue from just west of Rokeby Street

**West Silver Lake Avenue between Rowena Avenue and Armstrong Avenue**

West Silver Lake Avenue in this proposed pipeline segment is a two-lane residential roadway with sufficient width to provide on-street parking. Photographs 45, 46, 47 and 48 show this roadway segment.



Photograph 45 - Looking north along the west side of Silver Lake Drive toward Rowena Avenue



Photograph 46 - Looking south along the west side of Silver Lake Drive from south of Rowena Avenue





Photograph 47 - Looking north at the north leg of the Silver Lake Drive/Armstrong Avenue intersection



Photograph 48 - Looking south at the property between the divergence of Armstrong Avenue and the continuation of Silver Lake Drive

**Proposed Construction Methods**

Table 7 shows the proposed construction methods along proposed project Unit 4.

**Table 7 – Proposed Project Unit 4 Construction Methods**

Unit No.	Unit Details	Length (Feet)	Pipe Dia. (in)	Proposed Construction Method <sup>b</sup>
4	Los Feliz/Riverside to Rokeby/Rowena	4,200	84, 96	Open Trench/Jacking
	Rokeby/Rowena to Rowena/West Silver Lake	800	72	Open Trench
	Rowena/West Silver Lake to Armstrong/West Silver Lake	1,000	66	Open Trench/Jacking
	Trunk Line Rowena Branch Line	1,600	48	Open Trench/ Tunneling/ Slip Lining
Los Feliz/Riverside to Rowena Tank				
	Trunk Line Fletcher PS Branch Line	2,000	48	Open Trench
	Rokeby/Rowena to Fletcher			

**Traffic Flow Analysis**

Construction of Project Unit 4 would require partial closures along Riverside Drive, and could require full closure of smaller roadways such as Rowena Avenue and Silver Lake Drive. Access would likely remain along Riverside Drive. Parallel roadways would need to be utilized as detour routes for the road closures on smaller streets.

**Potential Transit Line Impacts**

Figure 8 is a map plot of the Los Angeles County Metropolitan Transportation Authority (MTA) bus routes in the vicinity of Project Unit 4.



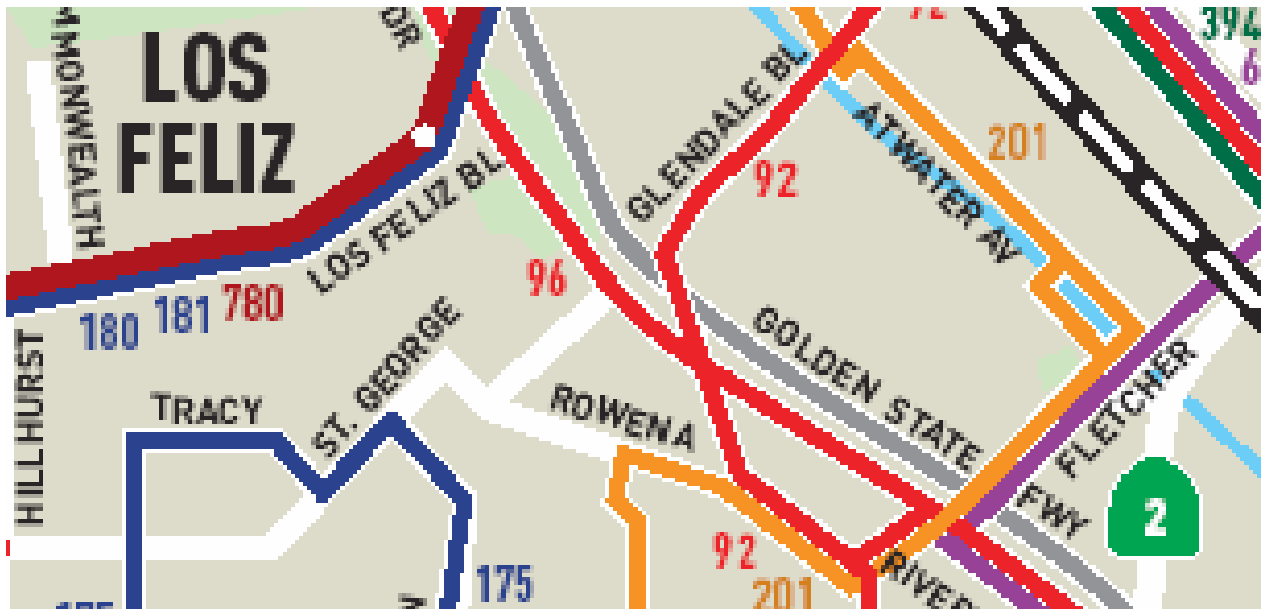


FIGURE 8 – TRANSIT ROUTES ALONG UNIT 4

Figure 8 illustrates that MTA Line 96 would be affected by construction along Riverside Drive and that MTA Line 92 would be affected by construction along Glendale Boulevard and Rowena Avenue. Since there are multiple north-south streets in the project vicinity, construction phasing could be scheduled to minimize impacts to MTA Lines 92 and 96. However, there may be some increased transit delay and impacts to the MTA Line 92 stop at the Glendale Boulevard/Riverside Drive intersection.

Impacts to transit service would be likely along these segments during project construction. Temporary stop relocations/closures and line re-routing could be necessary based on the roadway width needed for Project construction. Turning movements could be restricted or closed, forcing re-routing from neighborhoods currently served by transit.

## 7. Conclusions and Recommendations

---

### ***Roadway Capacity Analysis***

The River Supply Conduit Project – Lower Reach Segment will not result in any permanent traffic generating impacts on area roadways. As such, permanent physical or operations improvements to either study intersections or roadway segments are not required. However, the project will have very significant impacts during construction since much of the project will be performed via open trenching that will occur on roadways that are heavily traveled. This work will reduce capacities on the roadways directly affected and divert traffic to adjacent roadways that are also heavily traveled. Trenching is the only feasible cost alternative for the majority of the route. While jacking and tunneling can be used to reduce traffic impacts at specific locations, use of this method throughout the entire route would be prohibitively costly.

There are no measures that can be implemented to make the project impact less than significant, as defined by generally accepted level of-service standards. Open trenching on heavily traveled streets will reduce levels of service to F and will result in diversion of traffic to adjacent routes that would likely also operate at very poor levels of service.

These impacts will be temporary in nature and as such should have no lasting impact on the study roadways or the adjacent roadway systems, including the Los Angeles County Congestion Management roadways of the State Highway system.

### ***Pedestrian, Transit and Parking Impacts***

Construction of the pipeline and related facilities could potentially impact pedestrian movements on sidewalks and at crosswalk locations. The construction activities are also likely to affect transit interface locations (e.g. bus stops) and transit vehicle travel times. Finally, the project will likely eliminate on-street parking at the location of trenching activities. The elimination of parking could have an adverse impact on local businesses.

### ***General Impacts to Roadway Facilities and Transit Service***

As detailed construction and closure plans for the project are not yet available, analysis was not conducted of specific intersections or specific project segments. Capacity will be constricted, in some form, along each Project segment during construction.

Typical traffic impact mitigation measures would not be available for impacts caused by Project construction. The need for manual traffic control, detours, and roadway/approach closures would be defined through traffic plans developed for each construction segment. These plans would be reviewed by the City prior to implementation along the Project corridor. True mitigations would not be achieved along the Project construction areas, as capacity cannot be restored until construction is completed.

Impacts to transit service would be likely along Project segments during construction. Temporary stop relocations/closures and line re-routing could be necessary based on the roadway width

needed for Project construction. Turning movements could be restricted or closed, forcing re-routing from neighborhoods currently served by transit.

### ***Recommended Traffic Control Design Considerations***

To mitigate project impacts, the final design of the project should be performed to minimize the locations of complete roadways closures and to minimize the number and duration of lane closures. Detailed construction traffic control and detour (alternative route) plans should be prepared for each phase of construction and a public outreach program should be implemented to inform the public on the need for the project and the project's roadway closure and lane closure characteristics. A Construction Traffic Management Plan will have to be prepared and approved by LADOT prior to the start of work.

The design of traffic plans should be performed in consultation with local transit agencies to minimize impacts to passenger loading areas and to minimize travel times on scheduled transit routes. All affected transit agencies (such as MTA and LADOT) must be contacted to provide for any required modifications or temporary relocation of transit facilities. In addition, local business that might be potentially impacted by a loss of on-street parking should be contacted to best develop plans to mitigate the affect of these loses on their businesses.

Caltrans should be contacted to obtain permits for the transport of over-sized loads and to obtain encroachment permits, if necessary.

---

**APPENDIX D**  
**AIR POLLUTANT EMISSION CALCULATIONS**

---

**INTENTIONALLY LEFT BLANK**

**Table D-1: Maximum Daily Uncontrolled Construction Emissions (lbs/day)**

	<b>Onroad Emissions (1)</b>	<b>Offroad Emissions (2)</b>	<b>Fugitive Dust (3)</b>	<b>Total Emissions</b>
CO	174.74	409.79	---	584.53
NOx	199.56	545.78	---	745.34
ROG	24.07	94.49	---	118.56
SOx	1.84	3.21	---	5.05
PM10	212.57	47.31	46.87	306.75

(1) Tailpipe emissions plus paved road dust emissions.

(2) Tailpipe emissions only.

(3) Construction fugitive dust emissions.

**Table D-2: Maximum Daily Mitigated Construction Emissions (lbs/day)**

	<b>Onroad Emissions (1)</b>	<b>Offroad Emissions (2)</b>	<b>Fugitive Dust (3)</b>	<b>Total Emissions</b>
CO	174.74	197.86	---	372.61
NOx	199.56	394.11	---	593.67
ROG	24.07	33.21	---	57.28
SOx	1.84	3.23	---	5.07
PM10	212.57	23.85	11.15	247.58

(1) Tailpipe emissions plus paved road dust emissions.

(2) Tailpipe emissions only.

(3) Onsite construction fugitive dust emissions.

### Table D-3: Onroad Emissions

#### Passenger Vehicles (Worker Travel)

Pollutant	(pounds/mile)	miles/trip	trips/day	pounds/day
CO	0.013925	30	83	34.67
NOx	0.001489	30	83	3.71
ROG	0.001497	30	83	3.73
SOx	0.000009	30	83	0.02
PM10	0.000080	30	83	0.20
fugitive PM10	0.000098	30	83	0.24

#### Delivery Trucks

	(pounds/mile)	miles/trip	trips/day	pounds/day
CO	0.019135	20	366	140.07
NOx	0.026756	20	366	195.85
ROG	0.002779	20	366	20.34
SOx	0.000248	20	366	1.82
PM10	0.000483	20	366	3.54
fugitive PM10	0.028497	20	366	208.59

#### Total Onroad Emissions

Pollutant	pounds/day	
CO	<b>174.74</b>	
NOx	<b>199.56</b>	
ROG	<b>24.07</b>	
SOx	<b>1.84</b>	
PM10 Tailpipe	<b>3.73</b>	
PM10 fugitive	<b>208.84</b>	(Road Dust)

#### Assumptions:

EMFAC 2002 Version 2.2 Scenario Year: 2006 -- Model Years: 1965 to 2006

AP-42, Fifth Addition, Section 13.2.1; Table 13.2.1-1 (fugitive PM10)

Delivery truck estimates assume 61 trips (to deliver materials such as sand, backfill, and steel pipe) + 2 trips (water and welding trucks) per trenching area with four concurrent areas; and 36 trips (to haul waste and deliver material) + 2 trips (water and welding trucks) per jacking/tunneling area.

Trip Source: River Supply Conduit Delivery Truck Trip Estimates Table

## Table D-4: RSC Offroad Equipment Assumptions

### Open Trench Spread

Equipment	HP	Eq. Use hr/day
Backhoe - 436C	89	8
Forklift - RT-708H	80	8
Loader - 962G	200	8
Excavator/Pipelayer 315B	99	8
Compactor 224C	90	4
Crane - Link Belt Hylab 5	187	2

### Pipe Hydraulic Jacking Spread

Equipment	HP	Eq. Use hr/day
Diesel Generator	200	8
Excavator/Pipelayer 315B	99	8
Crane - Link Belt Hylab 5	187	2

### MTBM Spread

Equipment	HP	Eq. Use hr/day
Diesel Generator*	450	8
Excavator/Pipelayer 315B	99	8
Crane - Link Belt Hylab 5	187	2

\* - Generator assumed to be 600 hp for 96-inch pipe tunneling spreads

#### Notes:

1. Water truck and other various diesel fuel support equipment assumed to be on-road equipment and their emission are calculated assuming EMFAC2002 onroad emission factors
2. Equipment use will be adjusted proportionally when longer than 8 hour days are assumed.
3. The welding truck, an onroad vehicle, will be assumed to have a 50 hp diesel generator
4. Daily load factors will be assumed to be medium CAT Handbook load factors for determination of fuel use, and the generators will be assumed to be at an average hourly 50% load as will the cranes.



**Table D-5: Uncontrolled Emissions for Construction Areas**

OFFROAD EMISSIONS Open Trench Construction Area Equipment	Equipment Assumptions			BSFC lb/hp-hr	Base Factors g/bhp					Load Adjustment Factors					Fuel Sulfur Adjustment		Adjusted Factors g/bhp					
	HP	HP Cat.	Tier		NOx	CO	VOC	SOx	PM10	Adj. Type	NOx	CO	VOC	SOx	PM10	PM10 Fuel S	BSFC	NOx	CO	VOC	SOx	PM10
Backhoe - 436C	89	50-100	0	0.408	6.9	3.49	0.99	0.05182	0.722	Lo LF	1.1	2.57	2.29	1.18	1.97	-0.108	0.481	7.59	8.97	2.27	0.0591	1.31
Forklift - RT-708H	80	50-100	0	0.408	6.9	3.49	0.99	0.05182	0.722	Lo LF	0.95	1.53	1.05	1.01	1.23	-0.093	0.412	6.56	5.34	1.04	0.0509	0.80
Loader - 962G	200	175-300	0	0.367	8.38	2.7	0.68	0.04661	0.402	Hi LF	0.95	1.53	1.05	1.01	1.23	-0.083	0.371	7.96	4.13	0.71	0.0458	0.41
Excavator/Drill 315B	99	50-100	0	0.408	6.9	3.49	0.99	0.05182	0.722	Hi LF	0.95	1.53	1.05	1.01	1.23	-0.093	0.412	6.56	5.34	1.04	0.0509	0.80
Compactor 224C	90	50-100	0	0.408	6.9	3.49	0.99	0.05182	0.722	Lo LF	1.1	2.57	2.29	1.18	1.97	-0.108	0.481	7.59	8.97	2.27	0.0591	1.31
Crane	187	175-300	0	0.367	8.38	2.7	0.68	0.04661	0.402	None	1	1	1	1	1	-0.083	0.367	8.38	2.70	0.68	0.0454	0.32
Diesel Powered Welder	50	25-50	0	0.408	6.9	5	1.8	0.05182	0.8	Lo LF	1.1	2.57	2.29	1.18	1.97	-0.090	0.40	7.59	12.85	4.12	0.0052	1.49

Emission Factors are based on EPA Guidance Document "Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling — Compression-Ignition".  
 Fuel use factors are "medium" factors based on Caterpillar Handbook Edition 29.  
 Worst case assumption is four concurrent active trench construction areas.

OFFROAD EMISSIONS Pipe Jacking/MTBM Area - 96' Pipe Equipment	Equipment Assumptions			BSFC lb/hp-hr	Base Factors g/bhp					Load Adjustment Factors					Fuel Sulfur Adjustment		Adjusted Factors g/bhp					
	HP	HP Cat.	Tier		NOx	CO	VOC	SOx	PM10	Adj. Type	NOx	CO	VOC	SOx	PM10	PM10 Fuel S	BSFC	NOx	CO	VOC	SOx	PM10
Main Diesel Generator	600	300-600	0	0.367	8.38	2.7	0.68	0.04661	0.402	Lo LF	1.1	2.57	2.29	1.18	1.97	-0.097	0.433	9.22	6.94	1.56	0.0533	0.69
Excavator/Drill 315B	99	50-100	0	0.408	6.9	3.49	0.99	0.05182	0.722	Hi LF	0.95	1.53	1.05	1.01	1.23	-0.093	0.412	6.56	5.34	1.04	0.0509	0.80
Crane	187	175-300	0	0.367	8.38	2.7	0.68	0.04661	0.402	None	1	1	1	1	1	-0.083	0.367	8.38	2.70	0.68	0.0454	0.32
Diesel Powered Welder	50	25-50	0	0.408	6.9	5	1.8	0.05182	0.8	Lo LF	1.1	2.57	2.29	1.18	1.97	-0.090	0.40	7.59	12.85	4.12	0.0052	1.49

Emission Factors are based on EPA Guidance Document "Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling — Compression-Ignition".  
 Fuel use factors are "medium" factors based on Caterpillar Handbook Edition 29 and average 50% load on main generator.  
 Three concurrent active jacking/MTBM construction areas, with one operating 24 hours per day (22 hours active) the other two for 10 hours for a 14 hour average.

**Table D-6: Controlled Emissions for Construction Areas**

OFFROAD EMISSIONS Open Trench Construction Area Equipment	Equipment Assumptions			BSFC lb/hp-hr	Base Factors g/bhp					Load Adjustment Factors					Fuel Sulfur Adjustment		Adjusted Factors g/bhp					
	HP	HP Cat.	Tier		NOx	CO	VOC	SOx	PM10	Adj. Type	NOx	CO	VOC	SOx	PM10	PM10 Fuel S	BSFC	NOx	CO	VOC	SOx	PM10
Backhoe - 436C	89	50-100	1	0.408	5.5988	2.3655	0.5213	0.05182	0.473	Lo LF	1.1	2.57	2.29	1.18	1.97	-0.108	0.481	6.16	6.08	1.19	0.0594	0.82
Forklift - RT-708H	80	50-100	1	0.408	5.5988	2.3655	0.5213	0.05182	0.473	Lo LF	0.95	1.53	1.05	1.01	1.23	-0.093	0.412	5.32	3.62	0.55	0.0510	0.49
Loader - 962G	200	175-300	1	0.367	5.5772	0.7475	0.3085	0.04661	0.2521	Hi LF	0.95	1.53	1.05	1.01	1.23	-0.083	0.371	5.30	1.14	0.32	0.0459	0.23
Excavator/Drill 315B	99	50-100	1	0.408	5.5988	2.3655	0.5213	0.05182	0.473	Hi LF	0.95	1.53	1.05	1.01	1.23	-0.093	0.412	5.32	3.62	0.55	0.0510	0.49
Compactor 224C	90	50-100	1	0.408	5.5988	2.3655	0.5213	0.05182	0.473	Lo LF	1.1	2.57	2.29	1.18	1.97	-0.108	0.481	6.16	6.08	1.19	0.0594	0.82
Crane	187	175-300	1	0.367	5.5772	0.7475	0.3085	0.04661	0.2521	None	1	1	1	1	1	-0.083	0.367	5.58	0.75	0.31	0.0455	0.17
Diesel Powered Welder	50	25-50	1	0.408	4.7279	1.5323	0.2789	0.05182	0.3389	Lo LF	1.1	2.57	2.29	1.18	1.97	-0.090	0.40	5.20	3.94	0.64	0.0053	0.58

Emission Factors are based on EPA Guidance Document "Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling — Compression-Ignition".  
 Fuel use factors are "medium" factors based on Caterpillar Handbook Edition 29.  
 Worst case assumption is four concurrent active trench construction areas.

OFFROAD EMISSIONS Pipe Jacking/MTBM Area - 96' Pipe Equipment	Equipment Assumptions			BSFC lb/hp-hr	Base Factors g/bhp					Load Adjustment Factors					Fuel Sulfur Adjustment		Adjusted Factors g/bhp					
	HP	HP Cat.	Tier		NOx	CO	VOC	SOx	PM10	Adj. Type	NOx	CO	VOC	SOx	PM10	PM10 Fuel S	BSFC	NOx	CO	VOC	SOx	PM10
Main Diesel Generator	600	300-600	1	0.367	6.0153	1.306	0.2025	0.04661	0.2008	Lo LF	1.1	2.57	2.29	1.18	1.97	-0.097	0.433	6.62	3.36	0.46	0.0536	0.30
Excavator/Drill 315B	99	50-100	1	0.408	5.5988	2.3655	0.5213	0.05182	0.473	Hi LF	0.95	1.53	1.05	1.01	1.23	-0.093	0.412	5.32	3.62	0.55	0.0510	0.49
Crane	187	175-300	1	0.367	5.5772	0.7475	0.3085	0.04661	0.2521	None	1	1	1	1	1	-0.083	0.367	5.58	0.75	0.31	0.0455	0.17
Diesel Powered Welder	50	25-50	1	0.408	4.7279	1.5323	0.2789	0.05182	0.3389	Lo LF	1.1	2.57	2.29	1.18	1.97	-0.090	0.40	5.20	3.94	0.64	0.0053	0.58

Emission Factors are based on EPA Guidance Document "Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling — Compression-Ignition".  
 Fuel use factors are "medium" factors based on Caterpillar Handbook Edition 29 and average 50% load on main generator.  
 Three concurrent active jacking/MTBM construction areas, with one operating 24 hours per day (22 hours active) the other two for 10 hours for a 14 hour average.  
 Emission mitigation based on requiring EPA/CARB Tier 1 engines or better, with no credit being taken for any Tier 2 or Tier 3 compliant engines that may be used.

**Table D-5: Uncontrolled Emissions for Construction Areas**

OFFROAD EMISSIONS Open Trench Construction Area Equipment	Adjusted emission factors (lbs/1000 gallons)					Fuel Use (gal/hr)	Equipment Usage (hr/day) (pieces)		Daily Fuel Use (gal/day)	Worst Case Daily Emissions (pounds/day)				
	NOx	CO	VOC	SOx	PM10		NOx	CO		VOC	SOx	PM10		
Backhoe - 436C	246.77	291.61	73.71	1.92	42.72	2.49	10.00	4.00	99.6	24.58	29.04	7.34	0.19	4.25
Forklift - RT-708H	248.99	202.82	39.48	1.93	30.21	2.20	10.00	4.00	88.0	21.91	17.85	3.47	0.17	2.66
Loader - 962G	336.18	174.44	30.15	1.93	17.36	5.50	10.00	4.00	220.0	73.96	38.38	6.63	0.43	3.82
Excavator/Drill 315B	248.99	202.82	39.48	1.93	30.21	2.88	10.00	4.00	115.0	28.63	23.32	4.54	0.22	3.47
Compactor 224C	246.77	291.61	73.71	1.92	42.72	2.75	4.00	4.00	44.0	10.86	12.83	3.24	0.08	1.88
Crane	357.41	115.16	29.00	1.94	13.62	4.99	4.00	4.00	79.8	28.51	9.19	2.31	0.15	1.09
Diesel Powered Welder	297.01	502.84	161.30	0.20	58.15	1.41	8.00	4.00	45.1	13.39	22.66	7.27	0.01	2.62

Total Daily Open Trench Construction Emissions (pounds/day) **201.83 153.27 34.82 1.26 19.79**

OFFROAD EMISSIONS Pipe Jacking/MTBM Area - 96" Pipe Equipment	Adjusted emission factors (lbs/1000 gallons)					Fuel Use (gal/hr)	Equipment Usage (hr/day) (pieces)		Daily Fuel Use (gal/day)	Worst Case Daily Emissions (pounds/day)				
	NOx	CO	VOC	SOx	PM10		NOx	CO		VOC	SOx	PM10		
Main Diesel Generator	333.18	250.80	56.28	1.93	25.10	18.30	14.00	3.00	768.5	256.06	192.75	43.26	1.48	19.29
Excavator/Drill 315B	248.99	202.82	39.48	1.93	30.21	2.88	14.00	3.00	120.8	30.07	24.49	4.77	0.23	3.65
Crane	357.41	115.16	29.00	1.94	13.62	4.99	8.00	3.00	119.6	42.76	13.78	3.47	0.23	1.63
Diesel Powered Welder	297.01	502.84	161.30	0.20	58.15	1.41	12.00	3.00	50.7	15.06	25.50	8.18	0.01	2.95

Total Daily Jacking/MTBM Construction Emissions (pounds/day) **343.94 256.52 59.67 1.96 27.52**

Total Uncontrolled Emissions (pounds/day) **545.78 409.79 94.49 3.21 47.31**

**Table D-6: Controlled Emissions for Construction Areas**

OFFROAD EMISSIONS Open Trench Construction Area Equipment	Adjusted emission factors (lbs/1000 gallons)					Fuel Use (gal/hr)	Equipment Usage (hr/day) (pieces)		Daily Fuel Use (gal/day)	Worst Case Daily Emissions (pounds/day)				
	NOx	CO	VOC	SOx	PM10		NOx	CO		VOC	SOx	PM10		
Backhoe - 436C	200.23	197.65	38.81	1.93	26.77	2.49	10.00	4.00	99.6	19.94	19.69	3.87	0.19	2.67
Forklift - RT-708H	202.03	137.47	20.79	1.94	18.58	2.20	10.00	4.00	88.0	17.78	12.10	1.83	0.17	1.63
Loader - 962G	223.74	48.29	13.68	1.94	9.57	5.50	10.00	4.00	220.0	49.22	10.62	3.01	0.43	2.11
Excavator/Drill 315B	202.03	137.47	20.79	1.94	18.58	2.88	10.00	4.00	115.0	23.23	15.81	2.39	0.22	2.14
Compactor 224C	200.23	197.65	38.81	1.93	26.77	2.75	4.00	4.00	44.0	8.81	8.70	1.71	0.09	1.18
Crane	237.87	31.88	13.16	1.94	7.23	4.99	4.00	4.00	79.8	18.97	2.54	1.05	0.15	0.58
Diesel Powered Welder	203.51	154.10	24.99	0.21	22.60	1.41	8.00	4.00	45.1	9.17	6.95	1.13	0.01	1.02

Total Daily Open Trench Construction Emissions (pounds/day) **147.13 76.40 14.98 1.26 11.32**

OFFROAD EMISSIONS Pipe Jacking/MTBM Area - 96" Pipe Equipment	Adjusted emission factors (lbs/1000 gallons)					Fuel Use (gal/hr)	Equipment Usage (hr/day) (pieces)		Daily Fuel Use (gal/day)	Worst Case Daily Emissions (pounds/day)				
	NOx	CO	VOC	SOx	PM10		NOx	CO		VOC	SOx	PM10		
Main Diesel Generator	239.16	121.31	16.76	1.94	10.78	18.30	14.00	3.00	768.5	183.80	93.23	12.88	1.49	8.28
Excavator/Drill 315B	202.03	137.47	20.79	1.94	18.58	2.88	14.00	3.00	120.8	24.40	16.60	2.51	0.23	2.24
Crane	237.87	31.88	13.16	1.94	7.23	4.99	8.00	3.00	119.6	28.46	3.81	1.57	0.23	0.87
Diesel Powered Welder	203.51	154.10	24.99	0.21	22.60	1.41	12.00	3.00	50.7	10.32	7.81	1.27	0.01	1.15

Total Daily Jacking/MTBM Construction Emissions (pounds/day) **246.98 121.46 18.23 1.97 12.54**

Total Uncontrolled Emissions (pounds/day) **394.11 197.86 33.21 3.23 23.85**

**Table D-7: Fugitive Dust Calculations - Uncontrolled Emissions**

<b>Excavator Trenching</b>		
	<u>Value</u>	<u>Notes</u>
$E = (0.75)(0.0021)(d^{0.7})/(M^{0.3})$		E = lbs PM10/yd3 excavated
d = drop height =	5	ft (conservative estimate)
M = moisture content =	2.0%	(SCAQMD CEQA Handbook Table A9-9-G-1, Dry Soil)
E = emission factor =	0.0039	lb/yd3
Excavator Excavating Rate =	773.0	yd3/day - Project Estimate Trenching Construction Area
	3,092	yd3/day (Four Trench Pipeline Construction Area)
Mining/Excavator Rate =	390	yd3/day - Project Tunneling Construction Area
	1,170	yd3/day (Three Tunneling Construction Areas)
Total Daily Excavation Rate =	4,262	yd3/day
Emissions =	16.82	lbs/day

Source: AP-42, Table 11.9-2 (dragline operations), 1/95

<b>Material Unloading</b>		
	<u>Value</u>	<u>Notes</u>
$E = (k)(0.0032)[(U/5)^{1.3}]/[(M/2)^{1.4}]$		E = lbs PM10/ton unloaded
k = particle size constant =	0.35	for PM10
U = average wind speed =	16.00	mph (based on Burbank 5th percentile daytime wind data)
M = moisture content =	2.0%	(SCAQMD CEQA Handbook Table A9-9-G-1, Dry Soil)
E = emission factor =	0.00508	lb/ton
Unloading Rate =	4,262	yd3/day (see excavator trenching assumptions)
	5,541	tons/day (assumes 2600 lbs/yd3 for moist soil)
Emissions =	28.15	lbs PM10/day

Material Unloading - Source: AP-42, p. 13.2.4-3, 1/95

<b>Finish Grading</b>		
	<u>Value</u>	<u>Notes</u>
$E = (0.60)(0.051)(S^{2.0})$		E = lbs PM10/VMT
S = mean vehicle speed =	3.0	mph (estimate based on observation)
E = emission factor =	0.28	lb/VMT
Daily Travel Estimate	4.55	VMT/day (80 feet/day, 60 passes, 4 pipeline areas)
	1.25	lbs PM10/day

Source: AP-42, Table 11.9-2, 7/98

<b>Wind erosion of active construction area</b>		
	<u>Value</u>	<u>Notes</u>
Level 2 Emission Factor =	0.011	ton/acre-month
Construction Schedule =	0.7	lbs/acre-day (based on 30 days/month)
=	1.68E-05	lbs/scf-day
Area of construction =	38400	160 feet active length 40 foot width, 6 equiv. pipeline areas
Emissions	0.65	lbs PM10/day

Source: "Improvement of Specific Emission Factors (BACM Project No. 1), Final Report", prepared for South Coast AQMD by Midwest Research Institute, March 1996

<b>Daily Fugitive Dust Emission Estimate =</b>	<b>46.87 lbs PM10/day</b>
--	---------------------------

**Table D-8: Fugitive Dust Calculations - Controlled Emissions**

<b>Excavator Trenching</b>		
	<u>Value</u>	<u>Notes</u>
$E = (0.75)(0.0021)(d^{0.7})/(M^{0.3})$		E = lbs PM10/yd3 excavated
d = drop height =	5	ft (conservative estimate)
M = moisture content =	15.0%	(SCAQMD CEQA Handbook Table A9-9-G-1, Moist Soil)
E = emission factor =	0.0022	lb/yd3
Excavator Excavating Rate =	773.0	yd3/day - Project Estimate Trenching Construction Area
	3,092	yd3/day (Four Trench Pipeline Construction Area)
Mining/Excavator Rate =	390	yd3/day - Project Tunneling Construction Area
	1,170	yd3/day (Three Tunneling Construction Areas)
Total Daily Excavation Rate =	4,262	yd3/day
Emissions =	9.19	lbs/day

Source: AP-42, Table 11.9-2 (dragline operations), 10/98

<b>Material Unloading</b>		
	<u>Value</u>	<u>Notes</u>
$E = (k)(0.0032)[(U/5)^{1.3}]/[(M/2)^{1.4}]$		E = lbs PM10/ton unloaded
k = particle size constant =	0.35	for PM10
U = average wind speed =	16.00	mph (based on Burbank 5th percentile daytime wind data)
M = moisture content =	15.0%	(SCAQMD CEQA Handbook Table A9-9-G-1, Dry Soil)
E = emission factor =	0.00030	lb/ton
Unloading Rate =	4,262	yd3/day (see excavator trenching assumptions)
	5,541	tons/day (assumes 2600 lbs/yd3 for moist soil)
Emissions =	1.68	lbs PM10/day

Material Unloading - Source: AP-42, p. 13.2.4-3, 1/95

<b>Finish Grading</b>		
	<u>Value</u>	<u>Notes</u>
$E = (0.60)(0.051)(S^{2.0})$		E = lbs PM10/VMT
S = mean vehicle speed =	3.0	mph (estimate based on observation)
E = emission factor =	0.28	lb/VMT
Daily Travel Estimate	4.55	VMT/day (80 feet/day, 60 passes, 4 pipeline areas)
	0.19	lbs PM10/day

Source: AP-42, Table 11.9-2, 10/98

<b>Wind erosion of active construction area</b>		
	<u>Value</u>	<u>Notes</u>
Level 2 Emission Factor =	0.011	ton/acre-month
Construction Schedule =	0.7	lbs/acre-day (based on 30 days/month)
=	1.68E-05	lbs/scf-day
Area of construction =	38400	160 feet active length 40 foot width, 6 equiv. pipeline areas
Emissions	0.10	lbs PM10/day

Source: "Improvement of Specific Emission Factors (BACM Project No. 1), Final Report", prepared for South Coast AQMD by Midwest Research Institute, March 1996

<b>Daily Fugitive Dust Emission Estimate =</b>	<b>11.15 lbs PM10/day</b>
--	---------------------------