MITIGATED NEGATIVE DECLARATION

AND

INITIAL STUDY

TAYLOR YARD

WATER RECYCLING PROJECT

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

February 2007

MITIGATED NEGATIVE DECLARATION

Introduction

The Los Angeles Department of Water and Power (LADWP) recognizes the need to improve the reliability of the water supply for the City by increasing the use of recycled water. The LADWP has established a goal of meeting increased water demand through aggressive water recycling and conservation programs. The Taylor Yard Water Recycling Project (TYWRP or proposed project) is an extension of the water recycling system produced at the Los Angeles/Glendale Water Reclamation Plant (LAGWRP). LAGWRP is co-owned by the City of Los Angeles and the City of Glendale. Each City is entitled to 50 percent of the recycled water produced at the plant, and each City owns and operates separate (but connected) recycled water systems that emanate from LAGWRP. This project's objectives are to improve the reliability of the City's potable water supply through water recycling and conservation programs and to utilize recycled water generated by the LAGWRP for irrigation at the Taylor Yard Park.

In compliance with the California Environmental Quality Act (CEQA), a Mitigated Negative Declaration/Initial Study (MND/IS) was prepared for the project. The MND concludes that there would be no impacts associated with the proposed project that could not be mitigated to less than significant levels.

Project Description

The LAGWRP, located at 4600 Colorado Boulevard, is one of four treatment plants in the City of Los Angeles producing recycled water. Recycled water from the 20 million gallon per day (gpd) plant is currently used by the cities of Glendale and Los Angeles to irrigate two golf courses in Los Angeles' Griffith Park, supply cooling water to a Glendale power plant, irrigate the Forest Lawn Cemetery, and irrigate landscaping along the Golden State Freeway. An existing recycled water pipeline from the LAGWRP ends in the southernmost part of the City of Glendale. The TYWRP would connect to and extend this pipeline through northeastern Los Angeles to Taylor Yard in order to expand the users of the water from this plant and reduce the use of potable water for irrigation.

The TYWRP pipeline would originate at the southern terminus of the existing LAGWRP recycled water pipeline located near the intersection of Glendale Avenue and San Fernando Road. From that point, the new pipeline would be installed in San Fernando Road, heading southeast for more than two miles to a point about 650 feet south of the intersection of San Fernando Road and Elm Street. The proposed route of the TYWRP pipeline and its location in the road right-of-way (ROW) are detailed below; however, the exact location in the ROW may vary based on further substructure investigation.

- From Glendale Avenue to Fletcher Drive, the pipeline would be placed in the center turn lane of San Fernando Road, so that only the center lane and one north bound lane would be closed during construction.
- From Fletcher Drive to the on-ramp of the northbound Glendale Freeway (or Highway 2), the pipeline would be located in the east side of San Fernando Road approximately 24 feet west of the east property line.
- The pipe either would be trenched or jacked in San Fernando Road from the Glendale Freeway southbound off-ramp to the northbound on-ramp. This activity may occur during the nighttime hours (i.e., between 8:00 p.m. and 6:00 a.m.) due to Caltrans requirements associated with access to the Freeway on/off ramps.
- From Edward Avenue to Eagle Rock Boulevard, the pipeline would be located in the frontage road portion of San Fernando Road on the east side approximately 10.5 feet west of the east curb.

- In Cypress Avenue from Eagle Rock Boulevard to Division Street the recycled water line would be located in the center turn lane, again so that only the center lane and one north bound lane would be closed during construction.
- The pipeline would be located in Division Street for one block from Cypress Avenue to San Fernando Road.
- From Division Street to Macon Street and from Elm Street to Chaucer Street extension, the recycled water line would continue in San Fernando Road in the same alignment as the recently constructed 2,000-foot portion of pipeline, approximately 29 feet west of the east property line, 24 feet west of the east curb.

The proposed pipeline would consist of a total of approximately 10,400 feet (2 miles) of 16-inch ductile iron pipe in San Fernando Road, Cypress Avenue and Division Street. The existing 4-inch potable service connections in Taylor Yard will be used to connect to the proposed project. When the recycled water is available, the potable connection will be severed and then connected to the two connection Tees on the existing recycled water pipe in San Fernando Road.

Availability of Documents

Copies of the MND/IS and other documents utilized in conducting the environmental assessment for the proposed project are on file at:

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

The electronic MND/IS is available for review on-line at the LADWP's website at the following address:

http://www.ladwp.com/ladwp/cms/ladwp004156.jsp

Printed copies of the MND/IS are available for review at the following libraries:

Cypress Park Branch Library
1150 Cypress Avenue
Los Angeles, CA 90065

Atwater Village Branch Library
3379 Glendale Boulevard
Los Angeles, CA 90039

Environmental Determination

A MND/IS was prepared to identify the potential effects on the environment from the proposed project and to evaluate the significance of these effects. Based on the MND/IS, the proposed project would have less than significant effects or no impacts related to the following issues:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Geology/Soils
- Hazards and Hazardous Materials
- Hydrology/Water Quality
- Land Use/Planning
- Mineral Resources
- Population/Housing
- Public Services
- Recreation
- Utilities/Service Systems
- Mandatory Findings of Significance

However, the environmental assessment presented in the MND/IS identifies environmental impacts in three areas that could be potentially significant unless mitigation measures are applied that can effectively reduce or avoid the impacts. These are in the areas of:

- Cultural Resources
- Noise
- Transportation and Traffic

Mitigation measures have been incorporated to effectively mitigate all of the potentially significant environmental impacts identified in the MND/IS. Implementation of these mitigation measures can avoid the impacts or reduce them to a less than significant level. The mitigation measures are presented below in the Mitigation Monitoring and Reporting Plan.

Mitigation Monitoring and Reporting Plan

The following mitigation measures and a program for their implementation and monitoring are proposed.

Potential Impact	Mitigation Measure No.	Recommended Mitigation	Period/Method of Implementation	Implementation Monitor
Cultural Resources				
Potential impacts to the Historic San Fernando Right-of-Way (ROW)	CUL-1	LADWP shall conduct archaeological monitoring during all ground disturbing activities. 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.	During Construction	Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Business Unit will provide compliance oversight. A qualified archaeologist will also monitor during ground disturbing activities.
	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.	Start of construction and during construction	Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Business Unit will provide compliance oversight. A qualified archaeologist will also monitor during ground disturbance activities.

Potential Impact	Mitigation Measure No.	Recommended Mitigation	Period/Method of Implementation	Implementation Monitor
Potential disturbance of human remains	CUL-3	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 Project Construction 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.	During construction	Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Business Unit will provide compliance oversight
Noise				
Potential construction noise disturbances on neighboring sensitive receptors	NOI-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.	Prior to construction	Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Business Unit will provide compliance oversight
	NOI-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.	During Construction	Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Business Unit will provide compliance oversight
	NOI-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.	During Construction	Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Business Unit will provide compliance oversight

Potential Impact	Mitigation Measure No.	Recommended Mitigation	Period/Method of Implementation	Implementation Monitor
	NOI-4	The use of noise producing signals, including horns, whistles, alarms, and bells shall be for safety warning purposes only.	During Construction	Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Business Unit will provide compliance oversight
	NOI-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.	During Construction	Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Business Unit will provide compliance oversight
Potential conflicts with the City of Glendale Municipal Code Section 8.36.080 regarding construction hours	NOI-6	Proposed construction activities (before 7:00 a.m.) within the City of Glendale shall be subject to permit approval by the City of Glendale.	During Construction	Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Business Unit will provide compliance oversight
Potential disturbances to sensitive receptors from off-site construction related traffic	NOI-7	LADWP's construction contractor shall create vehicle staging areas and travel routes to be placed and planned such that noise is directed away from sensitive receptors.	During Construction	Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Business Unit will provide compliance oversight

Potential Impact	Mitigation Measure No.	Recommended Mitigation	Period/Method of Implementation	Implementation Monitor
Transportation/Traffic				
Potential impacts to the traffic load and capacity of the street system	TRA-1	A construction area traffic control plan shall be prepared for each location where construction activities would encroach into the right-of-way of a public roadway. The plan would include, but not be limited to such features as warning signs, lights, flashing arrow boards, barricades, cones, lane closures, parking restrictions, and restricted hours during which lane closures would not be allowed; e.g., 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m., or as directed by the affected public agencies (City of Los Angeles Department of Transportation, the City of Glendale, or Caltrans).	Prior to Construction	Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Business Unit will provide compliance oversight
	TRA-2	Construction shall not occur at the following locations and the existing number of travel lanes shall be provided during the designated peak periods; i.e., 7:00 to 9:00 a.m. and/or 4:00 to 6:00 p.m. or as specified by the affected public agency. This condition shall be applicable for the San Fernando Road/Glendale Avenue intersection (a.m. and p.m.), San Fernando Road/Treadwell Street intersection (p.m. only), San Fernando Road/Fletcher Drive intersection (a.m. and p.m.), San Fernando Road/Eagle Rock Boulevard intersection (p.m. only), Cypress Avenue/Cazador Street intersection (p.m. only), and Cypress Avenue/Division Street (p.m. only). Alternatively, the pipeline could be installed by jacking underneath the impacted intersections, subject to approval by LADOT or the City of Glendale.	During Construction	Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Business Unit will provide compliance oversight
	TRA-3	Construction shall not occur at the intersections where the Glendale Freeway eastbound and westbound on/off ramps intersect with San Fernando Road and the existing number of travel lanes shall be provided during the morning, mid-day, and evening periods; i.e., from 6:00 a.m. to 8:00 p.m. or as specified by Caltrans.	During Construction	Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Business Unit will provide compliance oversight
Potential safety risks to sidewalks, pedestrian crosswalks, and bike routes crossed by the project	TRA-4	Provide alternative pedestrian and bicycle access/circulation routes where existing facilities such as sidewalks, crosswalks, and bike lanes would be obstructed by construction activities.	During Construction	Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Business Unit will provide compliance oversight

Potential Impact	Mitigation Measure No.	Recommended Mitigation	Period/Method of Implementation	Implementation Monitor
Potential impacts resulting from access restrictions for emergency vehicles and property owners	TRA-5	Coordinate with emergency service providers (police, fire, and ambulance/paramedic agencies) prior to construction to provide information regarding lane closures, construction schedules, driveway blockages, etc. and to develop a plan to maintain or accommodate essential emergency access routes; e.g., plating over excavations, use of detours, etc.	Prior to Construction	Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Business Unit will provide compliance oversight
	TRA-6	Provide advance notification to affected property owners, businesses, residents, etc. of possible driveway blockages or other access obstructions and implement alternate access and parking provisions where necessary.	Prior to Construction	Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Business Unit will provide compliance oversight
Potential disruptions to public transit service	TRA-7	Coordinate with public transit agencies (e.g. MTA) to provide information regarding lane closures, bus stop disruptions, etc. and to designate alternate pick-up/drop-off locations if appropriate.	Prior to Construction	Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Business Unit will provide compliance oversight

INITIAL STUDY

Table of Contents

1. Project Information

1.1 Project Title

Taylor Yard Water Recycling Project (TYWRP or 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

Tania Bonfiglio
Los Angeles Department of Water and Power
Environmental Assessment
(213) 367-3027

1.4 Project Location

The project is located in the southernmost part of the City of Glendale and northeastern part of the City of Los Angeles (see Figure 1-1). In Los Angeles the proposed project alignment is situated within the City's community planning area of Northeast Los Angeles. The TYWRP pipeline would begin near Glendale Forest Lawn Memorial Park in the City of Glendale, and would continue southeasterly along San Fernando Road and terminate at the Taylor Yard in the City of Los Angeles.

1.5 Council District and Neighborhood Council

The proposed project would be located in Council Districts 1 and 13 of the City of Los Angeles. However, approximately 1,400 linear feet of the proposed pipeline would be located in the City of Glendale beginning at the intersection of Tyburn Street and San Fernando Road and extending northwest on San Fernando Road to Glendale Avenue and extending approximately 300 feet northeast of San Fernando Road on Glendale Avenue.

The TYWRP is located within the areas of the Glassell Park Neighborhood Council and the Greater Cypress Park Neighborhood Council.

1.6 Project Sponsor's Name and Address

Paul Liu
Los Angeles Department of Water and Power
Water Resources
111 North Hope Street, Room 1315
Los Angeles, CA 90012

1.7 General Plan Designation

The proposed alignment is situated within public roadways in areas designated as Public Facilities (the City of Los Angeles Department of Public Works, Bureau of Street Services).

1.8 Zoning

Most of the proposed alignment is located within city streets. Off street segments would occur only within the City of Los Angeles and are in areas zoned as Public Facilities (PF) and Light and Heavy Industrial (M2 and M3).

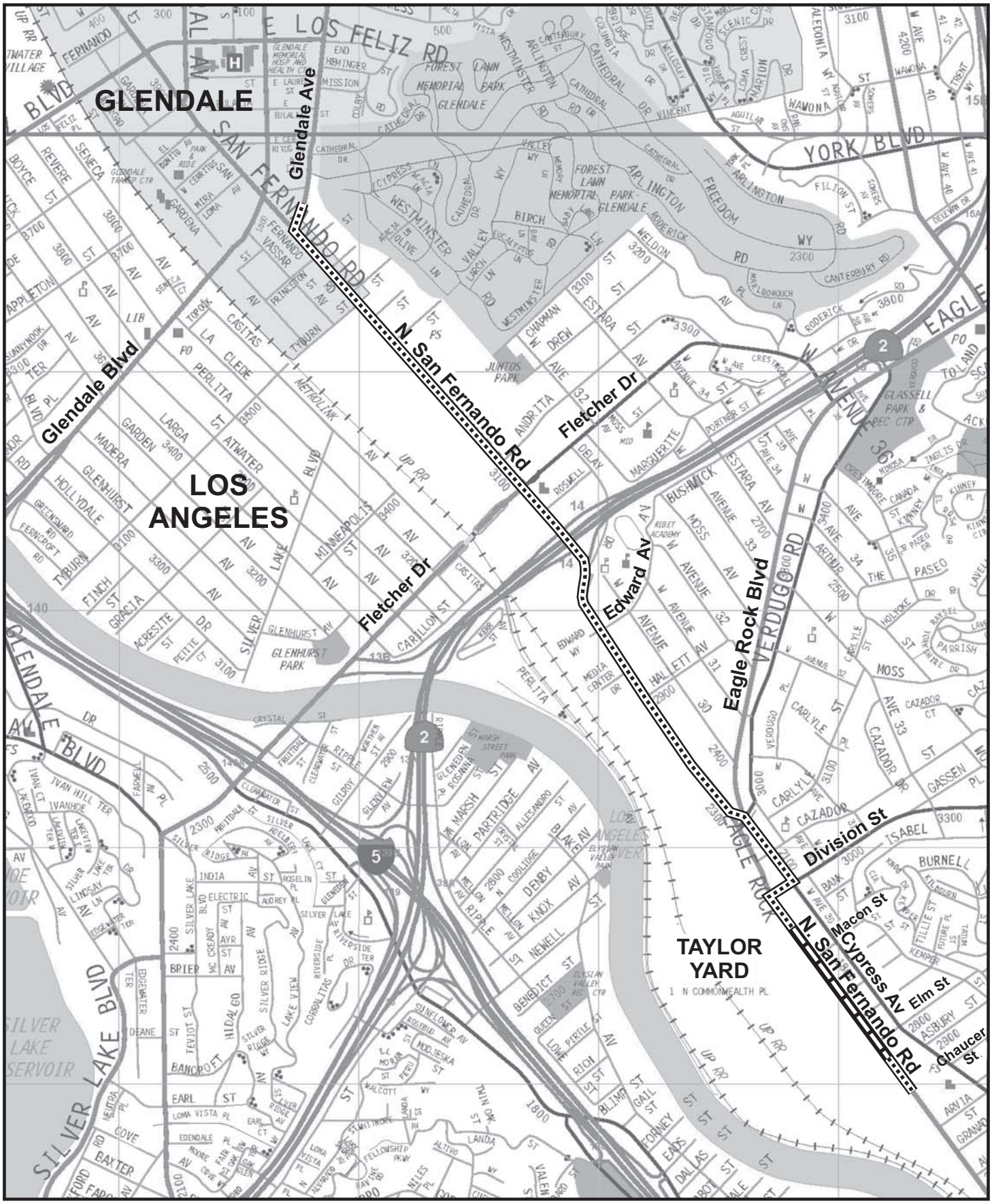


Figure 1-1
TYWRP Location

1.9 Surrounding Land Uses and Setting

The proposed pipeline alignments would be installed in an urban area and would traverse areas that include commercial and industrial uses. A field survey of the land uses in the areas along the pipeline route was conducted and is summarized in Table 1.9-1.

Table 1.9-1 Summary of Land Uses along Pipeline Route

Jurisdiction	General Land Use Type	Non Residential Sensitive Receptor(s)	General Character /Notable Land Uses
East Cerritos Avenue - Glendale Avenue to San Fernando Road			
City of Glendale	West: Commercial, Institutional East: Institutional	Forest Lawn Memorial Park and Museum (east), Cerritos Elementary School (west), Kings House of Faith Church and School (west)	• Right-of-way (ROW) characterized generally by institutional uses to the north and south, with commercial uses at the intersection of Glendale Avenue and San Fernando Road. • At the intersection of Cerritos Avenue and Glendale Avenue, the following uses are present: Forest Lawn Memorial Park and Museum (east), Cerritos Elementary School (southwest), Kings House of Faith Church and School (northwest). • Cerritos Elementary School playground and athletic fields extend southwest from this intersection approximately 500'. • Residential development begins to the north east of Kings House of Faith Church and School. • Glendale Memorial Hospital is located northwest of Cerritos Elementary School.
Glendale Avenue to Treadwell Street along San Fernando Road			
City of Glendale (from Glendale Avenue to Tyburn Street) and City of Los Angeles (from Tyburn Street to Treadwell Street)	West: Light Industrial, Commercial East: Light Industrial, Commercial	----	• ROW characterized generally by commercial storefronts and light industrial on the east and west. • Business types include drug store, chiropractor clinic, insurance offices, small restaurants, candle shop. • MTA Bus Stops located within this segment for Bus Routes 90, 91, 94, 394, and 603.
Treadwell Street to Fletcher Drive along San Fernando Road			
City of Los Angeles	West: Vacant Commercial, Commercial East: Light Industrial, Commercial, Public Services	----	• ROW characterized generally by commercial uses to the west, and commercial, light industrial and public services uses on the east. • Business types include a large vacant Kmart, fast food, insurance offices, small furniture stores, gas station. • The Los Angeles Police Department Northeast Station is located at Treadwell Street on the east side of San Fernando Road. • Residential development begins to the west of San Fernando Road behind the store frontage. • MTA Bus Stops located within this segment for Bus Routes 90, 91, 94, 394, and 603.
Fletcher Drive to Edward Avenue along San Fernando Road			
City of Los Angeles	West: Light Industrial, Light Manufacturing, Commercial East: Light Industrial, Commercial, School	Ribet Academy School	• ROW characterized generally by medium/light industrial, manufacturing, and commercial storefronts on the east and west. • Business types include metal work, auto repair, fast food, and a gas station. • The Glendale Freeway is located within the middle of this segment, offering both northbound and southbound on ramps. • The Ribet Academy School is located approximately 200' south of the northbound Glendale Freeway on ramp, at the terminus of the San Fernando Road frontage road. • North of the Glendale Freeway, development becomes primarily commercial, with mostly industrial/manufacturing south of the freeway.

Jurisdiction	General Land Use Type	Non Residential Sensitive Receptor(s)	General Character /Notable Land Uses
			• MTA Bus Stops located within this segment north of the Glendale Freeway for Bus Routes 90, 91, 94, 394, and 603.
Edward Avenue to Eagle Rock Boulevard along San Fernando Road			
City of Los Angeles	West: Light Industrial, Light Manufacturing, Commercial East: Light Industrial, Light Manufacturing, Commercial	----	• ROW characterized generally by medium/light industrial and manufacturing storefronts on the east and west. • Business types include auto repair, metal fabrication, second hand clothing outlet, glasswork. • San Fernando Road frontage road starts within this segment at Eagle Rock Boulevard. Frontage road runs parallel to San Fernando Road to the east, separated by an approximately 5' grass median. • Development to the east of San Fernando Road actually is located on and accessed by Frontage Road.
Eagle Rock Boulevard to Division Street along Cypress Avenue and Division Street to Chaucer Street along San Fernando Road			
City of Los Angeles	West: Taylor Yard, Vacant Space for Sale, Rail Lines East: Light Industrial, Auto Dealership	Glassell Park Elementary School located east of San Fernando Road on Avenue 30 and Cazador Street	• ROW characterized generally by medium/light industrial and manufacturing storefronts on the east, and open space on the west. • Business types include auto repair, large auto sale lots, convenience food, and a gas station. • MTA Metro rail use to the west along tracks. • Glassell Park Elementary School located approximately 200' east of San Fernando Road on Cazador Street east. • Residential development located 200-300' east.

1.10 Project Description

The Los Angeles Department of Water and Power (LADWP) is proposing to construct the TYWRP in order to provide recycled water produced by the Los Angeles-Glendale Water Reclamation Plant (LAGWRP) to the Taylor Yard. An important part of the City of Los Angeles' expanding emphasis on water conservation is the concept that water is a resource that can be used more than once. Recycled water from the LAGWRP meets the requirements of Title 22 of the California Code of Regulations which allows the use of recycled water for irrigation and industrial purposes. The potential recycled water users currently use potable water for uses, such as landscape irrigation and industrial purposes that do not require potable water. Using recycled water for these purposes would help reduce the use of potable water. Therefore, the TYWRP would be consistent with the LADWP's program to replace potable water use with recycled water use where feasible and appropriate, and would help the City of Los Angeles conserve potable water for uses that require it.

The LAGWRP, located at 4600 Colorado Boulevard, is one of four treatment plants in the City of Los Angeles producing recycled water. Recycled water from the 20 million gallon per day (gpd) plant is currently used by the cities of Glendale and Los Angeles to irrigate two golf courses in Los Angeles' Griffith Park, supply cooling water to a Glendale power plant, irrigate the Forest Lawn Cemetery, and irrigate landscaping along the Golden State Freeway. An existing recycled water pipeline from the LAGWRP ends in the southernmost part of the City of Glendale. The TYWRP would connect to and extend this pipeline through northeastern Los Angeles to Taylor Yard in order to expand the users of the water from this plant and reduce the use of potable water for irrigation.

This TYWRP pipeline would originate at the southern terminus of the existing LAGWRP recycled water pipeline located near the intersection of Glendale Avenue and San Fernando Road. From that point, the new pipeline would be installed in San Fernando Road, heading southeast for more than two miles to a point about 650 feet south of the intersection of San Fernando Road and Elm Street. The proposed route of the TYWRP pipeline and its location in the road ROW are detailed below; however, the exact location in the ROW may vary based on further substructure investigation.

- From Glendale Avenue to Fletcher Drive, the pipeline would be placed in the center turn lane of San Fernando Road, so that only the center lane and one north bound lane would be closed during construction.
- From Fletcher Drive to the on-ramp of the northbound Glendale Freeway (or Highway 2), the pipeline would be located in the east side of San Fernando Road approximately 24 feet west of the east property line.
- The pipe would be either trenched or jacked in San Fernando Road from the Glendale Freeway southbound off-ramp to the northbound on-ramp. This activity may occur during the nighttime hours (i.e., between 8:00 p.m. and 6:00 a.m.) due to Caltrans requirements associated with access to the Freeway on/off ramps.
- From Edward Avenue to Eagle Rock Boulevard, the pipeline would be located in the frontage road portion of San Fernando Road on the east side approximately 10.5 feet west of the east curb.
- In Cypress Avenue from Eagle Rock Boulevard to Division Street the recycled water line would be located in the center turn lane, again so that only the center lane and one north bound lane would be closed during construction.
- The pipeline would be located in Division Street for one block from Cypress Avenue to San Fernando Road.
- From Division Street to Macon Street and from Elm Street to Chaucer Street extension the recycled water line would continue in San Fernando Road in the same alignment as the recently constructed 2,000 feet portion of pipeline: approximately 29 feet west of the east property line, 24 feet west of the east curb.

The proposed pipeline would consist of a total of approximately 10,400 feet (2 miles) of 16-inch ductile iron pipe in San Fernando Road, Cypress Avenue and Division Street. The existing 4-inch potable service connections in Taylor Yard will be used to connect to the proposed project. When the recycled water is available, the potable connection will be severed and then connected to the two connection Tees on the existing recycled water pipe in San Fernando Road.

Pipeline Construction Methods

The TYWRP would consist of a 16-inch diameter pipeline installed in the ground beneath city streets. Installation of the pipeline would be accomplished using open trench excavation. However, under the Glendale Freeway corridor, and at some busy intersections where excavation of open trenches may be difficult and disruptive due to heavy traffic, the pipeline could be installed under the roadway surface by use of pipe jacking.

Construction of the pipeline is expected to occur between mid 2007 and mid 2008.

In sequence, the general process for both the open trench excavation and pipe jacking methods consists of site preparation, excavation, pipe (and/or appurtenant structure) installation and backfilling, and site restoration. Both construction methods would require an off-site staging area to temporarily store supplies and materials. Possible staging areas for the proposed project include Taylor Yard Park and a vacant Kmart parking Lot just north of the intersection of San Fernando Road and Fletcher Drive. The Kmart site is being converted into a Home Depot retail store.

Open-Trench Excavation. Open-trench excavation is a construction method typically utilized to install pipelines and its 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 street restoration (where applicable). Construction usually progresses along the alignment with the maximum length of open trench at one time being approximately 300 feet in length with a work area of approximately 1,000 linear feet. The following is a description of the phases of construction for trenching:

- **Site Preparation.** Traffic control plans, where necessary, would be first prepared in coordination with the Glendale or Los Angeles Department of Transportation, as applicable, to detour and delineate the traffic lanes around the work area. The approved plans would then be implemented. The existing pavement along the pipeline alignment would be 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 would

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

- **Excavation and Shoring.** A trench would be excavated along the 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 away off-site.

  The size of the trench for the proposed pipeline would be approximately 32 inches wide by 300 feet long. In addition, depending on the depth of adjacent substructures along the alignment, the depth of the trench would range from approximately 5 feet to 12 feet below the ground surface. As the trench is excavated, the trench walls would be 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 would be supported as excavation and shoring occurs.

  If construction occurs in areas with high groundwater, the groundwater would be removed during the excavation of the 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 (RWQCB).

- **Pipe Installation and Backfilling.** Once the trench has been excavated and shored, pipe laying would begin. 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 amount of pipe installed in a single day would vary, but is expected to range from 40 to 200 feet per day for the proposed project. The recycled water lines would be fully isolated from existing potable water lines in accordance with DHS regulations. Prior to backfilling, appurtenant structures would be installed as necessitated by design. After laying and attaching the pipe segments, the trench would be immediately backfilled with native soils, crushed miscellaneous bases, or cement slurry. Not more than 300 feet of trench, or the amount of the trench in one day, would be left unbackfilled. An average of approximately 150 feet of pipe would be completed per day. Any open trench at the end of each work day would be covered with steel plates so that traffic could resume use of the lanes.

- **Street Restoration.** Any portion of the roadway or landscaped areas damaged as a result of construction activities would be repaved and/or restored in accordance with all applicable City of Glendale Department of Public Works or City of Los Angeles Department of Public Works standards, as applicable. Once the pavement has been restored, traffic delineation (striping) would also be restored.

Pipe Jacking. As an option, LADWP may install the pipeline using pipe jacking under the Glendale Freeway corridor, and at some busy intersections where excavation of open trenches may be difficult and disruptive due to heavy traffic. This is a form of tunneling that would minimize surface disruption to the streets. Although pipe jacking would avoid the continuous surface disruption associated with open trenching, some surface disruption would occur because jacking and receiving pits would be constructed at each end of the "tunnel" and these features may need to be in the street right-of-way (ROW).

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 as described below.

- **Site Preparation.** Where necessary, traffic control plans detailing methods for detour and delineation of traffic lanes around the work areas would be prepared and implemented. The Traffic Control Plans would be coordinated with the Los Angeles Department of Transportation. In preparing to construct the jacking and receiving pits, the pavement would be first cut using a concrete saw or pavement breaker. As with open-

trench excavation, the pavement would be 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 would be approximately 550 feet, but may be longer or shorter depending on site conditions.

  For the proposed project, the size of the jacking pit would be approximately 40 feet long, 12 feet wide and 20 feet deep. The size of the receiving pit would be approximately 18 feet long, 10 feet wide, and 20 feet deep. The pits would be excavated with backhoes, cranes, and other excavation equipment. The excavated soil would be immediately hauled away. As excavation occurs, the pits would be shored utilizing a beam and plate shoring system.

- **Pipe Installation.** Once the pits are constructed and shored, a horizontal hydraulic jack would be placed at the bottom of the jacking pit. The steel casing would be lowered into the pit with a crane and placed on the jack. A simple cutting shield would be 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 would be 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 would be lowered, set in place, and welded to the casing that has been pushed. Installation of the steel casing is expected to progress at approximately 10 feet per day. Once the casing has been installed, the carrier pipe would then be lowered and placed on the jacks that would push the pipe into the steel casing. Installation of the 16-inch diameter pipe is expected to progress at approximately 10 linear feet per day. Per County of Los Angeles Department of Health Services requirements, the pipeline would be covered with purple plastic that contains lettering identifying the pipe as a recycled water pipeline to prevent any potential potable use (County of Los Angeles, 2007).

- **Street Restoration.** After completion of the pipe installation along the jacking location, the shoring system would be disassembled as the pits are backfilled, the soil compacted and the pavement or landscaping above replaced. Once the pavement has been restored, traffic delineation (striping) would also be restored.

Construction activities would occur between 6:00 a.m. and 3:30 p.m. Monday through Friday along the proposed project route north of Tyburn Street (City of Glendale) as well as the segment along San Fernando Road south of Edward Avenue to the Taylor Yard. Nighttime construction (i.e., between 8:00 p.m. and 6:00 a.m.) would occur along San Fernando Road between Tyburn Street (City of Glendale boundary) south to Edward Avenue to avoid traffic congestion per Caltrans and LADOT requirements. Site preparation and construction activities would primarily consist of operation of one or more of the following:

- One rubber tire backhoe,
- Three end dump trucks,
- One small 5-cyd dump truck,
- One 15-ton crane,
- One utility/gang truck, and
- Two pick-up trucks.

On a typical workday, an average of 5 workers (up to a maximum of 10 workers) would travel directly to one of the predetermined staging areas, where they would gather equipment and proceed in work crews to the construction site along the alignment. Additionally, construction activities would include truck trips associated with supply delivery (including pipeline sections), transport of excavated soil from trenching (soil would be transported to the closest appropriate LADWP facility, as is standard LADWP practice, for reuse or ultimate disposal), and transport of backfill and paving materials to the site. It is assumed that such truck operations would require 6 trucks to travel 20 miles per day, or an equivalent mix of trucks and trips, to a maximum of 120 miles per day. Table 1.10-1, below, lists the construction equipment required for the project along with the equipment's fuel type and the number of hours the equipment would be in service each day.

Table 1.10-1 Construction Equipment Daily Usage

OFF ROAD EQUIPMENT		
Equipment	Type	Hours per Day
Backhoe (1)	Medium Diesel	6
End Dump Trucks (3)	Heavy Diesel	8
5-cyd Dump Truck (1)	Medium Diesel	6
15-ton Crane (1)	Heavy Diesel	8
Utility/Gang Truck (1)	Medium Diesel	2
Pipe Jacking Equipment		
Hydraulic Jack (1)	Light Diesel	6
Auger machine (1)	Light Diesel	6
Welding truck with Generator (1)	Light Gasoline	4
40 kW Generator	Light Gasoline	6
ON ROAD EQUIPMENT		
Equipment	Type	Vehicle Miles Traveled
Construction Worker Vehicles (2)	Light Gasoline	15

Operation and Maintenance

Recycled water would be moved through the TYWRP pipeline by pumps at the LAGWRP. The existing pumps would be electronically controlled and operated from on site or from a remote location. The amount of recycled water pumped through the TYWRP would be regulated to closely match demand in order to avoid stagnant water in the pipeline. Therefore, the quantity of water pumped would vary with maximum flows coinciding with peak demand for irrigation water in summer and minimum flows during winter. It is estimated that a maximum of approximately 3,000 acre-feet per year (AFY) would be pumped through the pipeline.

1.11 Other Public Agency Approvals Required

The proposed project would require approvals from the following agencies:

- Glendale Department of Public Works
- Los Angeles Bureau of Engineering
- Los Angeles Department of Transportation
- State of California Department of Transportation (Caltrans)
- Los Angeles Department of Public Works, Bureau of Street Services
- Los Angeles County Metropolitan Transit Authority
- Los Angeles Regional Water Quality Control Board (for National Pollutant Discharge Elimination System permit for storm water)
- County of Los Angeles, Department of Health Services
- City of Los Angeles Police Department Board of Commissioners in the event that nighttime construction would be conducted.

2. Environmental Determination

2.1 Environmental Factors Potentially Affected

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

☐ Aesthetics	☐ Agricultural Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Hazards and Hazardous Materials	☐ Hydrology/Water Quality	☐ Land Use/Planning
☐ Mineral Resources	☐ Noise	☐ Population/Housing
☐ Public Services	☐ Recreation	☐ Transportation/Traffic
☐ Utilities/Service Systems	☐ 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.

Charles C. Holloway

Signature

February 20, 2007

Charles C. Holloway
Manager 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?	☐	☐	☐	☒
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

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.

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. Although portions of State Route 2 are designated as State scenic highways, the portion of State Route 2 that the proposed project would cross under is not designated as a State scenic highway. The closest portion of State Route 2 that is officially designated as a State scenic highway is approximately 6.9 miles northeast of the project area. This would also be the closest State scenic highway to the proposed project. The proposed project does not lie within the viewshed of any other State scenic highways.

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 recycled water pipeline with appropriate appurtenant structures. The proposed project pipeline would be located underground and would not be visible to viewers. Because the pipeline would be placed underground, operation of the pipeline would not affect the visual character of the surrounding areas. The proposed project's visual impacts would be temporary and limited to the construction phase.

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. Construction activities would occur between 6:00 a.m. and 3:30 p.m. Monday through Friday along the proposed project route north of Tyburn Street (City of Glendale) as well as the segment along San Fernando Road south of Edward Avenue to the Taylor Yard. Nighttime construction (i.e., between 8:00 p.m. and 6:00 a.m.) would occur along San Fernando Road between Tyburn Street (City of Glendale boundary) south to Edward Avenue to avoid traffic congestion per Caltrans and LADOT requirements. Although reflective parts of construction equipment could create a new source of daytime glare, it is not anticipated that this would be

substantial. Nighttime construction would require the use of night lighting along San Fernando Road between Tyburn Street and Edward Avenue. Land uses located immediately along these portions of the ROW are predominantly light industrial and manufacturing and these businesses operate during daytime hours. Any residential uses located off of the ROW on adjacent streets would not be significantly impacted by nighttime construction, as all construction lighting would be shielded to avoid light spillage and would be directed inward toward the ROW. Another sensitive receptor, the Ribet Academy School, is located adjacent to the ROW in this area. However, this school operates during the daytime hours, and nighttime construction would be preferable, because no students reside at the school during the nighttime. Therefore, the school would not be affected by nighttime construction lighting impacts. As the completed pipeline would be buried beneath San Fernando Road, operation of the proposed project would not create any new sources of light and glare.

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?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c. Involve other changes in the existing environment, which, due to their location or nature, could individually or cumulatively result in loss of Farmland, to non-agricultural use?	☐	☐	☐	☒

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 reduce demand on potable water within the LADWP water distribution system by utilizing recycled water at Taylor Yard. 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 Glendale, 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?	☐	☐	☐	☒
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e. Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

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. For the TYWRP 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 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.[1] The proposed project would create a water pipeline, allowing the use of recycled water at the Taylor Yard. Implementation of the proposed project does not include the development of any residential housing or create an increase in employment in the area. Therefore, the 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 not require any additional LADWP employees for operations. Because there would be no employment growth generated by the proposed project, the TYWRP 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. No impacts would occur.

[1] SCAQMD. 1993. CEQA Air Quality Handbook.

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

LESS THAN 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 (lbs/day)	Operational Phase (lbs/day)
Reactive Organic Gases (ROGs)	75	55
Carbon Monoxide (CO)	550	550
Nitrogen Oxides (NO_x)	100	55
Sulfur Oxides (SO_x)	150	150
Particulates (PM_{10})	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).

Short-Term Regional Construction Impacts. Construction of the proposed project would result in short-term increases in air pollution emissions in the area of the pipeline route. Construction equipment often use diesel fuel, which contains the pollutants most likely to trigger a SCAQMD threshold (particularly oxides of nitrogen [NO_x]). Table 3.3-2 provides the maximum daily construction emissions for the proposed project. Because the proposed project could include the use of pipe jacking equipment for tunneling under the 2 Freeway, this construction scenario is considered worst-case due to the heavy equipment required for this type of construction activity, and was considered as the construction scenario for determining worst-case air quality emissions. Appendix 1 contains all assumptions and emission factors used to estimate the construction emissions.

Table 3.3-2 Maximum Daily Construction Emissions (lb/day)

Emissions	On Road Emissions	Off Road Emissions (Excavation)	Off Road Emissions (Jacking)	Fugitive Dust	Maximum Daily Emissions	Exceed Threshold?
Reactive Organic Gases (ROGs)	18.70	11.71	19.01	---	37.71	NO
Carbon Monoxide (CO)	23.01	22.06	38.84	---	61.85	NO
Nitrogen Oxides (NO_x)	2.40	3.66	6.19	---	8.59	NO
Sulfur Oxides (SO_x)	0.04	0.02	0.04	---	0.08	NO
Particulates (PM_{10})	5.97	1.67	2.44	5.43	13.83	NO

As shown in Table 3.3-2, unmitigated construction emissions were found to be less than significant for construction, including the use of jacking equipment. In the event jacking equipment were not used, construction emissions would be reduced even further. Furthermore, compliance with SCAQMD Rule 403 during construction would ensure that any exposed soils are watered to further reduce fugitive dust emissions to a level well below the SCAQMD construction threshold for PM_{10} (refer to Appendix 1).

Operational Impacts. Long-term air quality impacts are those associated with the change in permanent usage of the TYWRP route. Two types of air pollutant sources are considered with respect to a proposed project: stationary and mobile sources. As the proposed project is a recycled water

pipeline, no stationary source emissions would occur. Mobile source emissions are associated with vehicular traffic. Mobile source air pollutant emissions associated with the operation of the TYWRP would be minimal and only generated during periodic maintenance and inspection activities. As discussed in Section 3.15, Transportation and Traffic, daily maintenance activities could result in a maximum of 10 daily vehicle trips. This level of traffic would create minimal air quality emissions, and would not violate SCAQMD thresholds.

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)?

*LESS THAN SIGNIFICANT IMPACT***.** The *CEQA Guidelines* require that a project be evaluated with respect to its contribution to the cumulative baseline. The cumulative baseline includes all emissions from existing sources in the region plus foreseeable changes to emissions associated with growth in the region. This contribution with respect to air emissions would include both construction and operational emissions. Cumulative projects would include any new development or general growth within the project area.

Short-Term Regional Construction Impacts. With regard to short-term impacts, cumulatively considerable impacts would result if emissions associated with the proposed project, combined with other projects, would result in emissions that exceed the SCAQMD thresholds. As shown in Table 3.3-2, unmitigated construction emissions were found to be less than significant for proposed project construction. In addition, dust control measures associated with SCAQMD Rule 403 would further minimize project PM10 emissions and would be consistent with the assumptions and regulations of the AQMP. The AQMP mandates reducing impacts to a level that is not cumulatively considerable. Only large unmitigated projects are considered cumulatively considerable. As such, the project would have no impact with respect to the implementation of the SCAQMD's AQMP. Therefore, the proposed project construction emissions would not result in a significant contribution when combined with nearby construction projects' short-term emissions that could exceed SCAQMD significance thresholds for emissions.

Operational Impacts. The proposed project would not cause a substantial increase in overall traffic emissions in the area. As discussed in Section 3.15, Transportation and Traffic, daily maintenance activities could result in a maximum of 10 daily vehicle trips. This volume of project-generated traffic does not represent significant new traffic on the overall street network. While future development along the route could generate additional vehicle trips and contribute operational emissions to the project area, the proposed project operational emissions would not result in a significant contribution when combined with future project's operational emissions.

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

*LESS THAN SIGNIFICANT IMPACT***.** To assess impacts associated with exposing sensitive receptors to substantial pollutant concentrations, this analysis uses the SCAQMD's Local Source Thresholds (LST) methods.[2] For LST analysis purposes, the proposed project route is defined as being located in Source Receptor Area 1 (SRA 1) for the City of Los Angeles Central Area.[3] To determine LST impacts, the estimated daily on-site NO_x, CO, and PM_{10} emissions calculated for project construction (as presented above in Table 3.3-2) are compared to SCAQMD's LST established for construction site size and proximity to sensitive receptors. For purposes of the proposed project, the construction site is considered to be one acre in size with the nearest receptors being residential development

[2] SCAQMD. Final Localized Significance Threshold Methodology. http://www.aqmd.gov/ceqa/handbook/LST/Method_final.pdf. Accessed May 31, 2006.

[3] SCAQMD. Localized Significance Threshold Source Receptor Area Lookup. http://www.aqmd.gov/ceqa/handbook/LST/SRA_City.xls. accessed May 31, 2006.

within 50 feet of the route. As the TYWRP is linear, it is assumed any one location under construction would be within one acre in size. Based on those assumptions, Table 3.3-3 presents the established SCAQMD LST for NO_x, CO, and PM_{10} as compared to the estimated construction emissions for the proposed project.

Table 3.3-3 Maximum Daily Construction Emissions (lb/day) as Compared to Local Source Thresholds (LST) Thresholds

Emission Source Type	Maximum Daily Emissions	LST Threshold	Exceed Threshold?
Carbon Monoxide (CO)	61.85	671.00	NO
Nitrogen Oxides (NO_x)	8.59	112.00	NO
Particulates (PM_{10})	13.83	14.00	NO

As shown in Table 3.3-3, the CO, NO_x, and PM_{10} emissions modeling results indicate that emissions would not exceed established SCAQMD LST, resulting in a less than significant impact. In addition, SCAQMD fugitive dust control Rule 403 requirements would further minimize the fugitive dust (PM_{10}) emissions to stay well below the established SCAQMD LST for PM_{10} (refer to Appendix 1).

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 pipeline and any appurtenant structures). Also, the operation of the proposed project would not include any activity that would create odors.

3.4 Biological Resources

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?	☐	☐	☐	☒
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c. Have a substantial adverse effect on federally protected wetlands 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?	☐	☐	☐	☒
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	☐	☐	☐	☒
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

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?

NO IMPACT. The proposed project area is located in an urban area that is developed with commercial, light industrial and institutional uses. The proposed project area does not support natural habitats for endangered, threatened, or rare species (CDFG, 2003). No endangered, threatened, or rare species are expected to occur along the proposed project alignment. Historically, the most recent endangered species that was known to occur in the proposed project area is the southwestern willow flycatcher (*Empidonax trailii extimus*), which was last seen in 1906 in the Pasadena Arroyo Seco area. However, there is no riparian woodland habitat which would support southwestern willow flycatcher in the proposed project area. Historically, the nearest species of concern that was known to occur in the area is Coast (San Diego) horned lizard (*Phrynosoma coronatum (blainvilii)*) which was last seen in Monterey Park approximately 0.7 miles southwest of the proposed project. Coast horned lizard habitat is characterized by coastal sage scrub and chaparral with friable, rocky, or shallow sandy soils. As the proposed project area does not contain any natural habitat, and no endangered, threatened, or rare species are known to occur in the vicinity.

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?

NO IMPACT. The proposed project area is developed with urban uses and is located in an urban setting. No riparian or natural community habitats exist in or near the proposed project area.

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 site is located in a highly urbanized environment. The proposed site does not contain federally protected wetlands habitat as defined by Section 404 of the Clean Water Act (CWA) (CDFG, 2003).

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?

NO IMPACT. Although Taylor Yard is adjacent to the southern end of the project route and has some established vegetation, this habitat is highly degraded and largely composed of non-native and invasive vegetation and would not provide sufficient habitat to be a migration corridor or nursery site. The proposed project would not be located within or cross any other watercourses, designated greenbelts, or Significant Ecological Areas that could be used for wildlife movement (County of Los Angeles, Department of Regional Planning, 2006).

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

NO IMPACT. Construction activities would occur within the San Fernando Road ROW and would not require the removal of any trees or other vegetation. Consequently, the project would not conflict with any local polices or ordinances protecting biological resources.

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 be located within an adopted Habitat Conservation Plan or Natural Community Conservation Plan area (CDFG, 2006). In addition, the proposed project site would not be located within the vicinity of any Significant Ecological Area, land trust, or habitat conservation plan (County of Los Angeles, Department of Regional Planning, 2006; CDFG, 2005).

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?	☐	☒	☐	☐
b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

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 WITH MITIGATION INCORPORATED. A Phase I Cultural Resources Investigation (included as Appendix 2 of this document) of the TYWRP pipeline alignment was conducted by McKenna et al. (2006). A standard records check through the California State University, Fullerton, South Central Coastal Information Center was completed. In addition, research was conducted through the Bureau of Land Management General Land Offices files, the University of California Historic Map Library, and local libraries and historical societies.

The proposed project crosses two United States Geological Survey (USGS) quadrangles: the Hollywood and Los Angeles Quadrangles. The majority of the alignment has not been surveyed previously, but areas near the Glendale Freeway and Taylor Yard Park have been surveyed. No resources were recorded for the area. However, San Fernando Road is an historic alignment. The nearby railroads are of historic value, and at least two significant structures are adjacent to the proposed pipeline alignment. However, only San Fernando Road is within the project ROW. Since the current roadway reflects the modern ROW, the earlier alignment was much narrower and historic archaeological resources may be present within the project ROW.

Although no historic resources have been identified specifically within the proposed project alignment, construction would require excavation in the vicinity of the historic ROW and has the potential to uncover additional historic resources. 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. 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.

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. As discussed in the Phase I Cultural Resources Investigation (Appendix 2), the proposed TYWRP pipeline alignment has a moderate level of sensitivity for archeological resources. Although no archeological resources were identified specifically within the proposed project alignment, construction would require excavation in the vicinity of the historic ROW and has the potential to uncover additional archeological resources. Therefore, Mitigation Measures CUL-1 and CUL-2 are recommended to reduce impacts to archeological resources to a less-than-significant level.

c. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

NO IMPACT. As described in Appendix 2, the area of Los Angeles County in which the proposed project is located consists of "…Quaternary gravels and sands from the Los Angeles River floodplain." Further, these deposits are non-fossil bearing deposits and the potential for fossil specimens is considered relatively low. Excavations that extend through the recent alluvial deposits may impact fossil bearing substrates. However, the shallow nature of the proposed excavations indicates that paleontological resources would not be impacted by the project.

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 Appendix 2, ethnographic and ethnohistoric sources were consulted and these sources verify that the proposed project area falls within the boundaries of Gabrieliño/Fernandeno territory. Although no known burial grounds have been identified along the proposed project alignment, the possibility of uncovering human remains exists. Implementation of the following mitigation measure would reduce impacts associated with the disturbance of human remains to a less-than-significant level:

CUL-3 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 Project Construction 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.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994) creating substantial risks to life or property?	☐	☐	☐	☒
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

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.

NO IMPACT. The proposed project route is not located within mapped Alquist-Priolo Earthquake Hazard Zones or Fault Rupture Hazard Zones (City of Los Angeles, 1996a). The nearest fault to the TYWRP route is the Raymond Hill Fault, located within the City of South Pasadena approximately four miles east of the route (DOC, 2006). Therefore, the TYWRP route is not located within any mapped fault zones or directly crossing any existing faults.

ii) Strong seismic ground shaking?

LESS THAN SIGNIFICANT IMPACT. The proposed project would be subject to ground shaking associated with earthquakes on faults of both the major San Andreas and Transverse Ranges fault systems. The Los Angeles area has many active and potentially active faults that may subject the project route to moderate to strong ground shaking during a major earthquake event. The closest major active and potentially active faults in the area include the Raymond Hill, Santa Monica, Hollywood, Northridge Thrust, Verdugo and Sierra Madre faults.

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 in the proposed project area (DOC, 2006). 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. Seismic-related ground failures such as liquefaction, lurching, lateral spreading, and differential settlement can result from strong ground shaking. The proposed project would be located almost entirely within areas mapped as having potential for seismically induced liquefaction (DOC, 2006; City of Los Angeles, 1996b). 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). The TYWRP route is located within 0.17 miles of the Los Angeles River, which has a great potential for earthquake induced liquefaction phenomena known as lateral spreading.

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.

Therefore, seismic ground failure including liquefaction could impact the TYWRP where the pipeline is located within liquefiable alluvial deposits near the Los Angeles River. However, the proposed project components would be constructed to meet all applicable Uniform Building Code and seismic safety standards. Additionally, all trenches would be backfilled with engineered fill, which meets proper compaction and shear strength requirements, and therefore has little liquefiable potential.

iv) Landslides?

NO IMPACT. The proposed project is not located within a mapped Landslide Hazard Zone (City of Los Angeles, 1996c). 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 TYWRP would require significant trenching, however the alignment would pass primarily through relatively level areas that have been previously disturbed (i.e. paved streets). No significant erosion or loss of topsoil is expected in these areas due to project construction, as all disturbed paved areas would be repaved upon completion of construction. The pipeline would be located underground and would have no operational 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?

LESS THAN SIGNIFICANT IMPACT. The proposed project alignment would be located along relatively flat terrain consisting primarily of previously disturbed soil and alluvial deposits as it would be located underneath existing roadway. As described above in the response to Question 3.6 [a (ii, iii, iv)], the TYWRP route would be susceptible to liquefaction. However, the proposed project components would be constructed to meet all applicable Uniform Building Code and seismic safety standards. Additionally, all trenches would be backfilled with engineered fill, which meets proper compaction and shear strength requirements, and therefore has little liquefiable potential.

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. 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 indicate 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. As described in Section 1.10, Project Description, the TYWRP 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.

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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g. Impair implementation of or physically interferes with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h. Expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

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), as a result of being existing roadway underfill. 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., compactors, 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. Operation of the proposed project would involve the conveyance of recycled water, and would not require the use, storage, or disposal of hazardous substances.

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. As described above in the response to Question 3.7 (a), the proposed TYWRP would not involve the use of substantial quantities of hazardous materials that would pose a risk to the public. Before commencing any excavation, 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). Furthermore, LADWP's contractor would 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.

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. Several schools are located within one-quarter mile of the proposed TYWRP route, including Cerritos Elementary School (120 E. Cerritos Avenue, Glendale), Glassell Park Elementary School (2211 W. Avenue 30, Los Angeles), and Ribet Academy College Preparatory School (2911 San Fernando Road, 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.

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. In addition, construction of the TYWRP would 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.

Operation of the proposed project would not involve hazardous emissions or materials. The TYWRP would transport recycled water. Any potential emergency release of water would not pose any health threats to those schools located within one-quarter mile of the route.

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. 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 (EDR, 2006).

Table 3.7-1 Target Sites within 0.25 Mile Radius of the Proposed Project Alignment

Database List	Number of Properties within Search Distance (0-0.25 mile either side of route)
National Priority List (NPL)	1
Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)	2
CERCLIS sites designated "No Further Remedial Action Planned" (CERCLIS-NFRAP)	4
Handlers with Resource Conservation and Recovery Act (RCRA) Corrective Action Activity (CORRACTS)	1
Resources Conservation and Recovery Information System for sites that treat, store, or dispose of waste (RCRIS-TSD)	0
Resources Conservation and Recovery Information System of Large Quantity Generators (RCRIS-LQG)	9
Resources Conservation and Recovery Information System of Small Quantity Generators (RCRIS-SQG)	50
Emergency Response Notification System (ERNS)	6
California DTSC's Annual Workplan (AWP)	0
Known and Potential Hazardous Substance Sites in California (CAL-SITES)	3
California Hazardous Materials Incident Report System (CHMIRS)	8
CORTESE	13
NOTIFY 65	0
TOXIC PITS	1
Solid Waste Facilities/Landfill Sites (SWF/LF)	0
Waste Management Unit Database System (WMUDS/SWAT)	1
Leaking Underground Storage Tank (LUST)	10
Hazardous Substance Cleanup Bond Act sites (BEP)	1
Underground Storage Tank (UST)	12
Low level threat properties with DTSC oversight (VCP)	1
California Facility Inventory Database (CA FID UST)	48
Historical UST	39
Record of Decision (ROD)	0
Facilities Index System (FINDS)	69
Hazardous Materials Incident Report System (HMIRS)	8
Material Licensing Tracking System (MLTS)	0
PCB Activity Database (PADS)	0
Formerly Used Defense Sites (FUDS)	0
RCRA Administration Action Tracking System (RAATS)	1
Toxic Chemical Release Inventory System (TRIS)	1
Toxic Substance Control Act (TSCA)	0
Federal Insecticide, Fungicide and Rodenticide Act (SSTS)	1
FIFRA, TSCA and EPCRA Tracking System (FTTS)	1
Aboveground Storage Tank Database (AST)	1
Dry Cleaners	2
California Water Resources Control Board – Waste Discharge System (WDS)	8
Recorded land use restrictions (DEED)	0

Database List	Number of Properties within Search Distance (0-0.25 mile either side of route)
Emissions Inventory Data (EMI)	48
California Spills, Leaks, Investigations, and Cleanups (CA SLIC)	13
Hazardous waste manifests (HAZNET)	134
Sites requested to have DTSC oversee investigation and/or cleanup activities (VCP)	1

Source: EDR, 2006.
Note: Only databases where sites were found are listed in the table. Sites may be listed in multiple databases.

Based on the EDR database search, many sites have been identified in the surrounding area and adjacent to the proposed alignment (see Table 3.7-1, above), which are listed in various databases compiled pursuant to Government Code Section 65962.5 (EDR, 2006) as containing hazardous materials, or having previously contained hazardous materials. 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.

During construction or operation, if contamination with the potential to create a significant hazard to the public or the environment is discovered, the applicable regulatory agency would be contacted and the required corrective actions would be undertaken to eliminate the hazard.

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 northernmost point of the TYWRP route is located approximately seven miles southeast of the Bob Hope Airport (formerly known as Burbank-Glendale-Pasadena Airport), which is the nearest airport to the route. Due to the distance of the proposed project to this airport and the nature of construction and operational activities (underground pipeline), neither construction nor operation of the TYWRP would have an impact on public airports or public use airports or result in an aviation safety hazard.

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 TYWRP is not located within the vicinity of a private airstrip.

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 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) and the City of Glendale 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)]. Implementation of coordination efforts with LADOT and the City of Glendale would minimize potential impacts to emergency response routes during construction.

Once operational, the proposed project would be underground and thus would not interfere with emergency response or evacuation plans.

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 pipeline alignment is located within a highly urbanized area, and is not located in close proximity to any wildlands. While open space is located to the west of San Fernando Road, no wildlands are found intermixed within the open space between the Los Angeles River and San Fernando Road. The TYWRP is not located within a Wildfire Hazard Area (City of Los Angeles, 1996d). Furthermore, according to the City of Los Angeles, the southern portion of the route (adjacent to open space containing vegetation) is not designated a Mountain Fire District or a Fire Buffer Zone (Zimas, 2006). Since construction activities would be temporary and all pipeline welding activities would occur within construction trenches or jacking pits (i.e., away from any flammable vegetation), construction impacts related to fire risk is considered less than significant. Operation of the TYWRP 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 recycled water.

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?	☐	☐	☒	☐
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)?	☐	☐	☒	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on or off site?	☐	☐	☒	☐
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site?	☐	☐	☒	☐
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f. Otherwise substantially degrade water quality?	☐	☐	☒	☐
g. Place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h. Place within a 100-year floodplain structures that would impede or redirect flood flows?	☐	☐	☐	☒
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j. Inundate by seiche, tsunami, or mudflow?	☐	☐	☒	☐

a. Violate any water quality standards or waste discharge requirements?

LESS THAN SIGNIFICANT IMPACT. Construction of the TYWRP 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 would be likely if construction occurs in areas of high groundwater levels. Depending on the depth of adjacent substructures along the alignment, the depth of the trench would range from approximately 5 feet to 12 feet below the ground surface. If construction occurs in areas with high groundwater, the groundwater would be removed during the excavation of the 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 (RWQCB).

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 Stormwater Pollution Prevention Plan (SWPPP), as required by the National Pollution Discharge Elimination Systems (NPDES) permit. The SWPPP would be submitted to the 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.

In addition, LADWP designs and constructs recycled water pipelines in accordance with California DHS regulations and guidelines to provide adequate vertical and horizontal separation from potable water pipelines and potable supply wells.[4] This would minimize the potential for possible travel of recycled water from a pipeline leak or rupture to reach or affect potable supply wells or the water distribution system. All recycled water would be treated to meet or exceed Title 22 of the California Code of Regulations standards before entering the recycled water distribution system. If a break were to occur along a recycled water pipeline, impacts related to water quality standard violations at production wells are not anticipated because the separation distances between recycled water distribution pipelines and production wells would comply with Title 22 requirements.[5] Therefore, the proposed TYWRP would not violate any water quality standards or waste discharge requirements.

b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

LESS THAN SIGNIFICANT IMPACT. During construction of the proposed project, 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. Depending on the depth of adjacent substructures along the alignment, the depth of the trench would range from approximately 5 feet to 12 feet below the ground surface.

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

[4] City of Los Angeles Department of Public Works (Bureau of Sanitation) and Department of Water and Power. 2005. *Integrated Resources Plan Draft Environmental Impact Report*, located online at: http://www.lacity-irp.org/drafteir.htm. November.

[5] Ibid.

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. 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. In addition, the proposed project would serve to increase the reliability and adaptability of the existing LADWP water supply system by transporting recycled water. Therefore, it is unlikely the proposed pipeline project would result in groundwater withdrawals that would adversely affect groundwater levels. Consequently, the operation of the TYWRP would not contribute to the depletion of groundwater supplies, interfere substantially with groundwater recharge, or lower the groundwater table.

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 TYWRP would be constructed along public street rights-of-way, and would not permanently alter the drainage pattern of the area. Upon installation of the pipeline, roadways would be repaved and original drainage patterns would resume. While the southern end of the TYWRP would be located in close proximity to the Los Angeles River, drainage facilities located along San Fernando Road would eliminate the possibility of drainage entering 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 the response to Question 3.8(c), above, construction of the pipeline would not alter the course of the Los Angeles River. Open-trench and tunneling construction methods (i.e., pipe jacking under the Glendale Freeway) would not substantially increase the rate or amount of surface runoff, or result in erosion, siltation, flooding on- or off-site. The proposed pipeline 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, thereby avoiding erosion and surface run-off.

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. As described in Section 1.10, Project Description, open-trench and pipe jacking would be a commonly used construction method for the TYWRP. As such, dewatering may be required. However, water discharge from dewatering is anticipated to be minimal due to pipe depth ranging from 5 to 12 feet, 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. Furthermore, as discussed in the response to Question 3.8(a), the discharge water is not anticipated to contain any 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.

f. Otherwise substantially degrade water quality?

LESS THAN SIGNIFICANT IMPACT. 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. Furthermore, as discussed in response to Question 3.8(a), the discharge water is not anticipated to contain any contaminants.

Construction equipment and trash containers may potentially leak contaminants, increasing the possibility of washing contaminated runoff into nearby waterbodies, particularly the Los Angeles River. However, the amount of contaminants that could leak from construction equipment and trash containers would be relatively small. 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 be required as part of the proposed project.

As discussed in the response to Question 3.8 a), above, LADWP recycled water pipelines would be designed and constructed in accordance with California DHS regulations and guidelines to provide adequate vertical and horizontal separation from potable water pipelines and potable supply wells.[6] This would minimize the potential for possible travel of recycled water from a pipeline leak or rupture to reach or affect potable supply wells or the water distribution system. All recycled water would be treated to meet or exceed Title 22 of the California Code of Regulations standards before entering the recycled water distribution system. If a break were to occur along a recycled water pipeline, impacts related to water quality standard violations at production wells are not anticipated because the separation distances between recycled water distribution pipelines and production wells would comply with Title 22 requirements.[7]

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 proposed project is not located within a 100-year flood hazard area (City of Los Angeles, 1996f). As described in Section 1.10, Project Description, the TYWRP pipeline would be placed underground along/in City of Los Angeles and City of Glendale streets and does not include the development of any housing as part of the project.

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 Glendale, construction activities near such areas would not interfere with or redirect the movement of water. The proposed TYWRP pipeline would operate as an underground closed system within existing street rights-of-way, LADWP property and existing easements.

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 described in Section 1.10, Project Description, the proposed TYWRP pipeline would be placed underground along/in City of Los Angeles and City of Glendale streets, and would not be located in proximity to any existing levee or dam structure. As such, the TYWRP would not expose people or structures to a significant risk of

6 City of Los Angeles Department of Public Works (Bureau of Sanitation) and Department of Water and Power. 2005. *Integrated Resources Plan Draft Environmental Impact Report*, located online at: http://www.lacity-irp.org/drafteir.htm. November.

7 Ibid.

loss, injury or death involving flooding. In the event the of a pipeline failure, LADWP emergency response procedure would include:

- LADWP identifies problem or an individual informs LADWP personnel.
- LADWP automated response or LAWSDAC LADWP contacts appropriate managers and operations personnel who would then do the following:
  - Isolate damaged pipeline sections and stop water discharge.
  - Repair damaged pipeline section(s).

The volume of recycled water released in such an event would be limited to the amount of water contained in the section of the pipeline between the shut-off valves, which is not expected to yield enough water to pose a threat to life or property.

j. Inundation by seiche, tsunami, or mudflow?

LESS THAN SIGNIFICANT IMPACT. The portion of the TYWRP route south of the 2 Freeway is located within an Inundation and Tsunami Hazards Area (City of Los Angeles, 1996f). However, the TYWRP pipeline would be placed underground along/in City of Los Angeles streets, and would not result in an increase to the risk of inundation or tsunamis. Furthermore, no housing development is included as part of the proposed project. Therefore, the proposed project would not increase the number of people at risk within the designated Inundation and Tsunami Hazard Area. The route is not located in areas subject to seiche and/or mudflows (Zimas, 2006).

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?	☐	☐	☒	☐
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c. Conflict with any applicable habitat conservation plan or natural communities conservation plan?	☐	☐	☐	☒

a. Would the project physically divide an established community?

LESS THAN SIGNIFICANT IMPACT. As presented in Table 1.9-1 (Summary of Land Uses Along the Pipeline Route), the proposed project would be constructed near properties primarily consisting of commercial, light industrial and institutional land uses. All construction activities would occur within existing street ROWs. The work area associated with construction activities could result in temporary traffic disruptions at intersections and entrances to parking lots adjacent to the project alignment. However, these potential construction disturbances would be temporary and long-term disruption to land uses is not expected. Section 3.15, Transportation and Traffic, provides a detailed discussion of traffic and access issues, and the associated mitigation measures to help reduce any identified significant impacts. In addition, because the pipeline is being constructed within existing road ROWs, it would not physically divide an established community.

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 Glendale. Within the City of Los Angeles, the proposed project would be located within the community of Northeast Los Angeles. Land use polices and standards applicable to the proposed project are included within the following:

- City of Los Angeles General Plan
- City of Los Angeles Municipal Code
- Northeast Los Angeles Community Plan
- City of Glendale General Plan
- City of Glendale Zoning Code
- South Brand Specific Plan

Based on a review of applicable land use policies and standards contained within the documents listed above, the proposed project would not result in any conflicts. The general intent of local plans and standards 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 agencies' missions 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. Operation of the pipeline would also be consistent with existing plans and policies because it would be constructed underground in existing road ROWs and its use would not conflict with existing land uses.

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. 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

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. The project route and the immediate surrounding area are not identified as being in an important mineral resource area designated by the State Division of Mines and Geology (DOC, 2001).

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 route is not located in an area designated as containing locally important mineral resources, as designated within both the City of Los Angeles General Plan and City of Glendale General Plan (City of Los Angeles, 2001; City of Glendale, 1993). Therefore, construction and operation of the proposed project would not result in the loss of availability of a locally important mineral resource recovery site.

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?	☐	☒	☐	☐
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

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?

LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED. The proposed project alignment would be located within the Cities of Los Angeles and Glendale and would be subject to the noise policies and standards of the City of Los Angeles General Plan and noise ordinances, and the City of Glendale Municipal Code. Noise measurements were recorded at six locations in the vicinity of the proposed project, as identified in Figure 3.11-1, Ambient Noise Measurement Locations. The noise levels listed in Table 3.11-1 provide a representative sample of ambient noise conditions along the proposed TYWRP route at noise sensitive receptor locations. The primary noise sources in the project area were documented as traffic noise along the streets that would contain the proposed project (e.g., San Fernando Road and Glendale Avenue). As described in Table 3.11-1, the existing average ambient noise levels along the alignment ranged between 62.1 dBA and 71.5 dBA. A land use survey was conducted (see Table 1.9-1) to identify any potentially sensitive receptors in the general vicinity of the proposed TYWRP route. Noise sensitive receptors are facilities (e.g., residential, hospitals, schools, sound studios, etc.) where excessive noise may convey annoyance or loss of business.

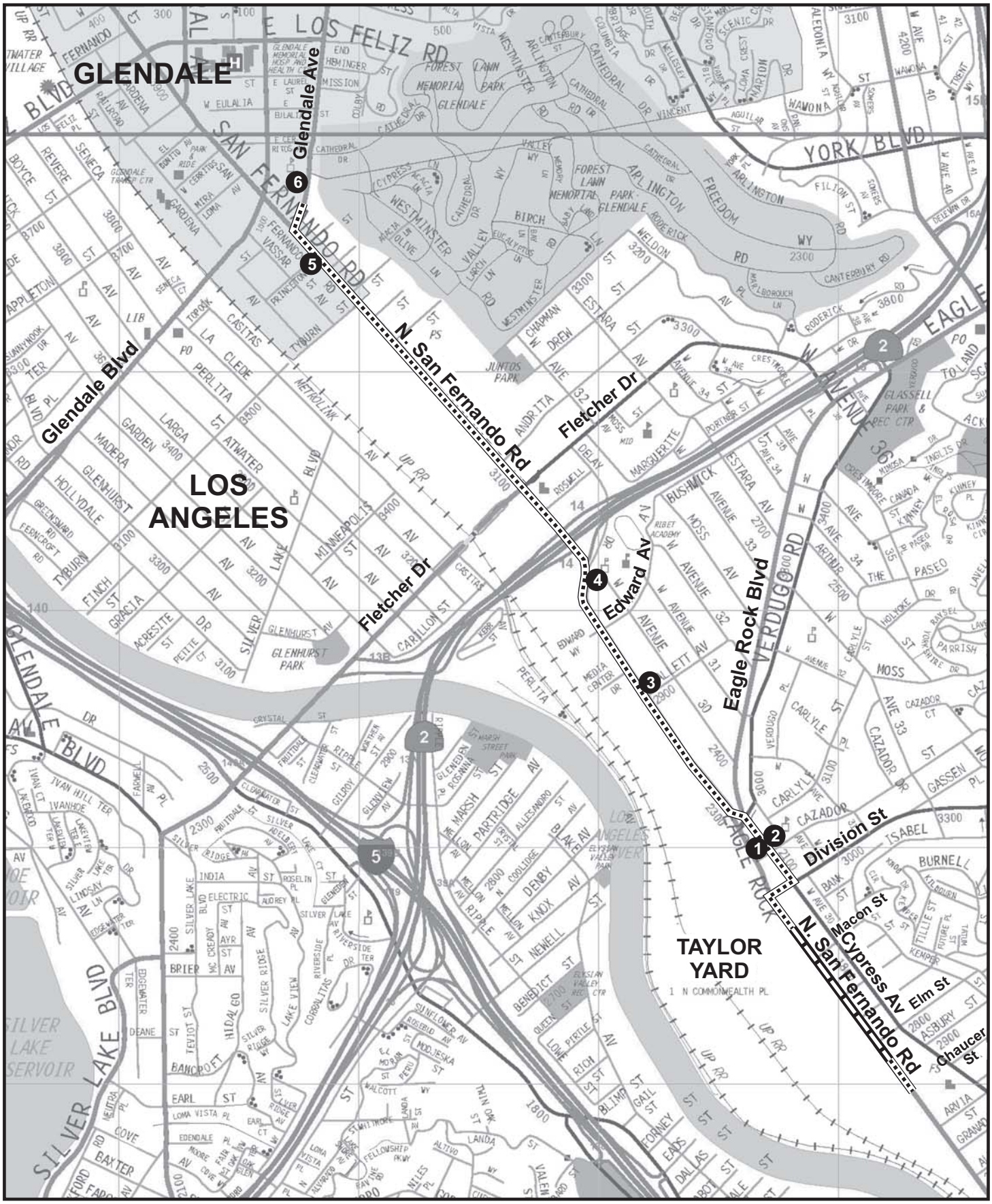
Table 3.11-1 Ambient Noise Levels Representative of the Project Area

Location #	Location Description	Survey Period	L_{eq}	L_{max}	L_{min}	Noted Sources
1	Northeast corner of San Fernando Road and Cazador Street	12:00 p.m. to 12:15 p.m.	71.5	82.3	55.3	Maximum noise caused by auto traffic along San Fernando Road (centerline was approximately 20' from reading location), which included large truck movements. Other noise sources include traffic turning on Cazador Street and entering the parking lot at this intersection to access small storefronts.
2	Residential homes located at the northeast corner of Cypress Avenue and Cazador Street	12:40 p.m. to 12:55 p.m.	70.5	81.1	55.4	Maximum noise caused by auto traffic along Cypress Avenue (centerline was approximately 15' from reading location). San Fernando Road centerline was approximately 150' west of location. Glassell Park Elementary School located approximately 40' east of reading, approximately 200' east of San Fernando Road.
3	Residential home located on Hallett Avenue east of San Fernando Road	1:15 p.m. to 1:20 p.m.	67.7	78.9	49.3	Maximum noise caused by auto and truck traffic along San Fernando Road and frontage road (San Fernando Road centerline was approximately 120', and frontage road centerline approximately 100', from reading location). Other noise sources included light vehicle traffic on Hallett Avenue. Hallett Avenue begins an approximately 8-10 percent upward gradient at the frontage road. Reading was taken approximately 20' above San Fernando Road.
4	East side of San Fernando Road frontage road terminus, at Ribet Academy Entrance	1:40 p.m. to 1:55 p.m.	69.3	76.7	60.2	Maximum noise caused by auto and truck traffic along San Fernando Road (centerline was approximately 50' from reading location), traffic entering the Glendale Freeway northbound on road (approximately 75' from reading location), and frontage road use for Ribet Academy vehicle entrance (approximately 18' from reading location). Ribet Academy parking fronts the street network with the 8-story classroom building set-back. School property is bound by an approximately 4-foot concrete wall with extended vegetation. Glendale Freeway is elevated approximately 50' above San Fernando Road grade, with the northbound on ramp grading upward.
5	Residential location on Princeton Street west of San Fernando Road	2:15 p.m. to 2:30 p.m.	62.5	74.9	49.0	Maximum noise caused by auto traffic along San Fernando Road (centerline was approximately 100' from reading location). Other noise sources included vehicles and students walking by on the sidewalk talking on Princeton Street and nearby lawn work activities.
6	Glendale Avenue south of Cerritos Avenue at Cerritos Elementary School	2:45 p.m. to 3:00 p.m.	62.1	72.3	45.8	Maximum noise caused by auto traffic along Glendale Avenue (centerline was approximately 35' from reading location). Other noise sources included a group of students playing in the distance within internal playground area.

Notes: All measurements are in dBA and were taken on September 20, 2006.

The following sensitive receptors are located within proximity to the pipeline route:

- Forest Lawn Cemetery and Museum (east of ROW)
- Cerritos Elementary School (west of ROW)
- Kings House of Faith Church and School (west of ROW)
- Ribet Academy School (east of ROW)
- Glassell Park Elementary School (east of ROW)



Aspen Environmental Group	N 0 700 1400 Scale in Feet	1 Noise Measurement Proposed Project Existing 16" Recycled Water Pipeline	**Figure 3.11-1** **Ambiant Noise Measurement Locations**

The closest residences are single-family homes east of San Fernando Road approximately 75 feet from the proposed project's route boundary at Hallet Street, and approximately 150-feet south of San Fernando Road at Princeton Street.

Applicable Regulations

City of Los Angeles. 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.

City of Glendale. Section 8.36.080 of the City of Glendale Municipal Code was adopted in order to minimize intrusive noise sources that are related to construction activities. It is unlawful for any person within a residential zone, or within 500 feet of a residential zone, to operate equipment or perform any outside construction or repair work on buildings within the City between the hours of 7:00 p.m. and 7:00 a.m., Monday through Saturday, unless a permit is obtained beforehand. No construction is allowed on Sundays and holidays without an approved permit. The City of Glendale does not have regulations that establish maximum construction noise levels. As with the Los Angeles Municipal Code §112.05, Section 8.36.290(K) of the Glendale Municipal Code provides an exemption from the Noise Ordinance for any activity, operation, or noise, which cannot be brought into compliance (with the Noise Ordinance) because it is technically infeasible to do so.

Impacts

Construction noise would be created from on-site and off-site sources. As stated in Section 1.10 (project description), construction activities would occur between 6:00 a.m. and 3:30 p.m. Monday through Friday along the proposed project route north of Tyburn Street (City of Glendale) as well as the segment along San Fernando Road south of Edward Avenue to the Taylor Yard. Nighttime construction (i.e., between 8:00 p.m. and 6:00 a.m.) would occur along San Fernando Road between Tyburn Street (City of Glendale boundary) south to Edward Avenue to avoid traffic congestion per Caltrans and LADOT requirements.

Table 3.11-2 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.

On-site Sources. 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. 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, no more than one area of pipeline would be constructed concurrently, thus isolating construction noise to one linear area of pipeline construction. Table 3.11-2 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.

LADWP will comply with Section 112.05 of the Los Angeles Municipal Code to the greatest extent feasible by use of mufflers, shields, sound barriers, and/or any other noise reduction device or techniques during the operation of equipment. As the City of Glendale does not specify dBA thresholds for construction noise, it is assumed that sensitive receptors along the TYWRP alignment within the City of Glendale also could be significantly impacted by construction noise. 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.

During construction, receptors and residences (as identified above) 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 amount of pipe installed in a single day would vary, but is expected to range from 40 to 200 feet per day for areas of the TYWRP route using the open trench construction method. Therefore, 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. Due to the potential noise impacts associated with the construction of the proposed TYWRP, Mitigation Measures NOI-1 through NOI-5 would be required to reduce construction noise levels on neighboring sensitive receptors to a less-than-significant level.

Proposed project construction activities would occur outside of the hours permitted by Section 8.36.080 of the City of Glendale Municipal Code at the following two intersections:

- Intersection of Princeton Street and San Fernando Road: residential receptor 160 feet west of the ROW;
- Intersection of Tyburn Street and San Fernando Road: residential receptor 362 feet west of the ROW

Implementation of Mitigation Measure NOI-6 would reduce any non-conformity with the City of Glendale Municipal Code to a less-than-significant level.

In an effort to minimize rush hour traffic impacts per Caltrans and LADOT requirements, the proposed TYWRP would include nighttime construction to avoid construction during traffic rush hour times (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 7:00 p.m. Monday through Friday). The portion of the proposed TYWRP route along San Fernando Road between Tyburn Street and Edward Avenue (within the City of Los Angeles) is considered a high traffic major roadway. Construction of the proposed TYWRP along this segment would occur during the nighttime hours. Los Angeles Municipal Code Section 41.40 specifies that nighttime construction activities are prohibited within 500 feet of residential receptors.[8] The following residential receptor is located along this segment of San Fernando Road within 500 feet of the proposed TYWRP ROW:

[8] City of Los Angeles Municipal Code, 2006. Municipal Code accessed online at: http://www.lacity.org/lacity102.htm on February 7, 2007.

- Intersection of Roswell Street and San Fernando Road: residential receptor 344 feet east of the ROW.

Due to the proximity of this residential receptor along this segment of the TYWRP, and in order to conduct nighttime construction, LADWP would apply for a variance to Los Angeles Municipal Code Section 41.40 from the City of Los Angeles Police Department Board of Commissioners. Approval of this variance would allow nighttime construction per the conditions of the approved variance. Therefore, approval of this variance would eliminate any impacts associated with compliance of Los Angeles Municipal Code Section 41.40 on nearby residential receptors.

Installation of the 16-inch diameter pipe under the Glendale Freeway is expected to progress at approximately 10 linear feet per day, and may occur during the evening between 8:00 p.m. and 6:00 a.m. As shown in Table 1.9-1 (Summary of Land Uses along the Pipeline Route), there are no land uses in this portion of the ROW that would be adversely impacted due to nighttime construction activities. Land uses along this portion of the ROW are light industrial and manufacturing and these businesses operate during daytime hours. One sensitive receptor, the Ribet Academy School, is located adjacent to the ROW in this area. However, this school operates during the daytime hours, and nighttime construction would be preferable, because no students reside at the school during the nighttime, and thus the school would not be affected by nighttime construction noise impacts.

Mitigation Measures

NOI-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.

NOI-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.

NOI-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.

NOI-4 The use of noise producing signals, including horns, whistles, alarms, and bells shall be for safety warning purposes only.

NOI-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.

NOI-6 Proposed construction activities (after 7:00 p.m. and before 7:00 a.m.) within the City of Glendale shall be subject to permit approval by the City of Glendale.

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 early morning hours, could result in potentially significant short-term noise impacts. Mitigation Measures NOI-1 through NOI-6 above would reduce construction noise levels on neighboring receptors to a less-than-significant level. In addition to these

measures, Mitigation Measure NOI-7 would further reduce noise generated by construction related traffic.

Mitigation Measures

NOI-7 LADWP's construction contractor shall create vehicle staging areas and travel routes to be placed and planned such that noise is directed away from sensitive receptors.

b. Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

LESS THAN SIGNIFICANT IMPACT. Construction of the TYWRP would generate groundborne vibration. In general, demolition of roadway and jacking construction activities would likely generate the highest vibration.

The City of Los Angeles Noise Ordinance does not include any City standards related to vibration impacts. Section 8.36.210 of the City of Glendale Noise Ordinance provides that vibration created from the operation of any device would be a violation of City standards if such vibration is above the vibration perception threshold of an individual at or beyond the property boundary of a source on private property. For sources on a public space or public ROW, a violation would occur if the vibration perception threshold of an individual is exceeded at a distance of 150 feet from the source. The Noise Ordinance does not define the level of vibration that is deemed to be perceptible by an individual and does not establish maximum allowable vibration levels.

As discussed above in the response to Question 3.11 (a), the closest residences to the proposed project are single-family homes east of San Fernando Road approximately 75 feet from the proposed project's route boundary at Hallet Street within the City of Los Angeles. Although construction of the proposed project would include heavy equipment, it is unlikely that construction would result in perceptible, let alone excessive, groundborne vibration. Because the TYWRP is a linear project, construction would not occur at any one location for an extended duration. Therefore, any vibration impacts would be short-term and temporary. Vibration impacts are considered less than significant, and are not expected to exceed vibration perception thresholds of individuals that are at a distance greater than 150 feet from the TYWRP ROW located within the City of Glendale.

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, therefore, no substantial permanent increase in ambient noise levels would occur. Any maintenance activities generating noise would occur short-term and be limited in duration, therefore not permanently affecting the ambient noise levels in the area. As such, the increase in ambient noise levels would not be substantial, as the placement of the pipeline underground would substantially reduce noise levels, and would not affect sensitive receptors.

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?

LESS THAN SIGNFICANT IMPACT WITH MITIGATION INCORPORATED. Construction-related activities would temporarily elevate noise levels in the vicinity of the project sites [see the response to Question 3.11(a), above]. As discussed above in the response to Question 3.11(a), the implementation of Mitigation Measures NOI-1 through NOI-7 would reduce these impacts to a less-than-significant level.

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. The northernmost point of the TYWRP route is located approximately seven miles southeast of the Bob Hope Airport (formerly known as Burbank-Glendale-Pasadena Airport), which is the nearest airport to the route. Due to the distance of the proposed project to this airport and the nature of construction and operational activities (underground pipeline), neither construction nor operation of the TYWRP would subject people residing or working in the project area to excessive noise levels.

f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

NO IMPACT. The proposed project route 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 noise levels.

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)?	☐	☐	☐	☒
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

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 TYWRP pipeline would be located in public street rights-of-way within the Cities of Los Angeles and Glendale. Construction activities resulting from project implementation would be short-term and temporary, as described in Section 1.10 of the Project Description.

For purposes of this analysis, U.S. Census Year 2000 data for population, housing, and employment for the Cities of Los Angeles and Glendale, and the County of Los Angeles, are presented in Table 3.12-1. As shown in Table 3.12-1, the Cities of Los Angeles and Glendale contain a considerable construction workforce (86,491 persons in construction trades), with a total construction workforce within Los Angeles County of 202,829 workers.

Table 3.12-1 Year 2000 Existing Conditions Population, Housing, and Employment

Location	Population	Housing Units		Employment	
		Total Units	Vacancy	Total Employed [a]	In Construction Trades
City of Glendale	194,973	73,713	Owner: 495 (0.7%) Renter: 1,413 (1.9%)	91,672	5,459 (6.4%)
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.

For the proposed project, approximately 10 personnel would be employed on the project during the peak construction period. 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 related to existing or future population growth impacts would occur as a result of the proposed project.

Upon completion, the TYWRP pipeline 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 is to allow the Taylor Yard use of recycled water. Therefore, the proposed project would not induce population growth either directly or indirectly.

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 ROW. No housing or persons would be displaced by the project.

c. Would the project displace substantial numbers of people necessitating the construction of replacement housing elsewhere?

NO IMPACT. As stated in the response to Question 3.12(b), above, there is no existing housing within the proposed pipeline route ROW. Therefore, the proposed project would not result in the displacement of people, nor would it necessitate the construction of replacement housing elsewhere.

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?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

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?

LESS THAN SIGNIFICANT 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 Glendale, the Glendale Fire Department (Glendale FD) provides fire prevention and suppression services and emergency medical services.

The LAFD has a total of 3,562 uniformed firefighters, with a total of 1,091 uniformed Firefighters (including 223 serving as Firefighter/Paramedics), always on duty at 103 neighborhood fire stations located strategically across the LAFD's 470 square-mile jurisdiction (Los Angeles County Fire Department, 2006a). Equipment includes engines, trucks, paramedic engines, crash units, hazardous materials response and decontamination units, foam carriers, rescue ambulances, helicopters, and boats. The LAFD Station nearest the TYWRP route is Station 50, located at 3036 Fletcher Drive (City of Los Angeles Fire Department, 2006b).

The Glendale FD has a total staffing of 231 sworn and non-sworn personnel, with at least 57 firefighters on duty every hour of every day at nine neighborhood fire stations located strategically across the City of Glendale (City of Glendale Fire Department, 2006a). Glendale FD Station 22, located at 1201 S. Glendale Avenue, is the closest fire station to the TYWRP route. Equipment at this station includes three engines, one truck, and paramedic units (City of Glendale Fire Department, 2006b).

As discussed in Section 3.7, Hazards and Hazardous Materials, in the response to Question 3.7 (h), the TYWRP route is not located within any lands designated as Mountain Fire District or a Fire Buffer Zone. Therefore, construction activities would not occur within an area designated with a substantial fire risk. As indicated above, local LAFD and Glendale FD stations would serve the TYWRP 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 as project construction would not occur in areas of high fire danger. In addition, watering activities associated with dust suppression for disturbed areas would reduce the potential for any fire accident to occur with surrounding vegetation if encountered. 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. Once operational, the proposed project would not pose a fire risk, since the pipeline would be buried and would only convey recycled water.

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 Glendale Police Department (Glendale PD) provides police service to the City of Glendale. Police Stations serving the TYWRP route include the LAPD Northeast Community Police Station at 3353 North San Fernando Road and the Glendale Community Police Station at 131 North Isabel Street.

According to Officer Tanya Hanamaikai of the Crime Prevention Unit, Community Relations Section of the LAPD, the proposed TYWRP would not impact the LAPD's ability to serve the area (City of Los Angeles Police Department, 2006). Officer Hanamaikai estimates that the service response time to the City of Los Angeles area of the proposed TYWRP route would be approximately 7 minutes and the proposed TYWRP would not impact LAPD existing response times (City of Los Angeles Police Department, 2006). Furthermore, According to Sergeant Steve Carey of the Patrol Bureau of the Glendale PD, the proposed TYWRP would not impact the Glendale PD's ability to serve the area and would not impact existing response times (City of Glendale Police Department, 2006).

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 Glendale PD. The proposed project would include security features such as controlled construction access, 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 Glendale (refer to Section 3.15, Transportation and Traffic).

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 TYWRP 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.

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 TYWRP would neither induce population growth through the need for new employees nor result in new housing. The proposed TYWRP does not include the construction of, induce expansion of, or require the removal of any recreational facilities.

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. After completion of the pipe installation along the TYWRP route, each segment would be backfilled, the soil compacted and the pavement above replaced. Once the pavement has been restored, traffic delineation (striping) would also be restored.

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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

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 create a recycled non-potable water line to serve the Taylor Yard area. As such, the proposed project would cause no increase in use of existing neighborhood and regional parks or other recreational facilities.

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?

NO IMPACT. The proposed project includes a water supply pipeline and appurtenant structures necessary for the operation and maintenance of the pipeline. The proposed project does not include the construction of, induce expansion of, or require the removal of any 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)?	☐	☒	☐	☐
b. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☒	☐	☐
e. Result in inadequate emergency access?	☐	☒	☐	☐
f. Result in inadequate parking capacity?	☐	☐	☒	☐
g. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☒	☐	☐

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)?

LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED. There are three primary categories of traffic impacts that would occur as a result of the proposed project. The first category would be the impacts associated with construction traffic on the roadways that provide access to the project site. During the construction activities, a number of vehicles would be traveling to and from the project site, including trucks delivering materials to the site, trucks transporting waste material away from the site, and construction workers' vehicles commuting to and from the site. The second category of traffic impacts would be the physical impacts of the pipeline construction activities that would occur within the ROW of the affected public roadways (i.e., lane closures, detours, driveway blockages, loss of parking, and disruptions to traffic, transit, and pedestrian movements in the construction area). The third category of traffic impacts would be the impacts associated with the operation of the proposed project after construction is complete. The traffic impacts associated with each of these construction and operation categories have been evaluated for the affected streets and highways.

The roadways and signalized intersections that would be most directly affected by the proposed project and the responsible jurisdictions are shown in Table 3.15-1. The intersections listed are the signalized intersections through which the proposed pipeline would be constructed. There are other signalized intersections along San Fernando Road within the project limits; however, these intersections would not be directly affected by the construction of the proposed project, because the

alignment would be in the San Fernando Road frontage road or Cypress Avenue instead of San Fernando Road at these locations.

Table 3.15-1 Affected Roadways and Signalized Intersections

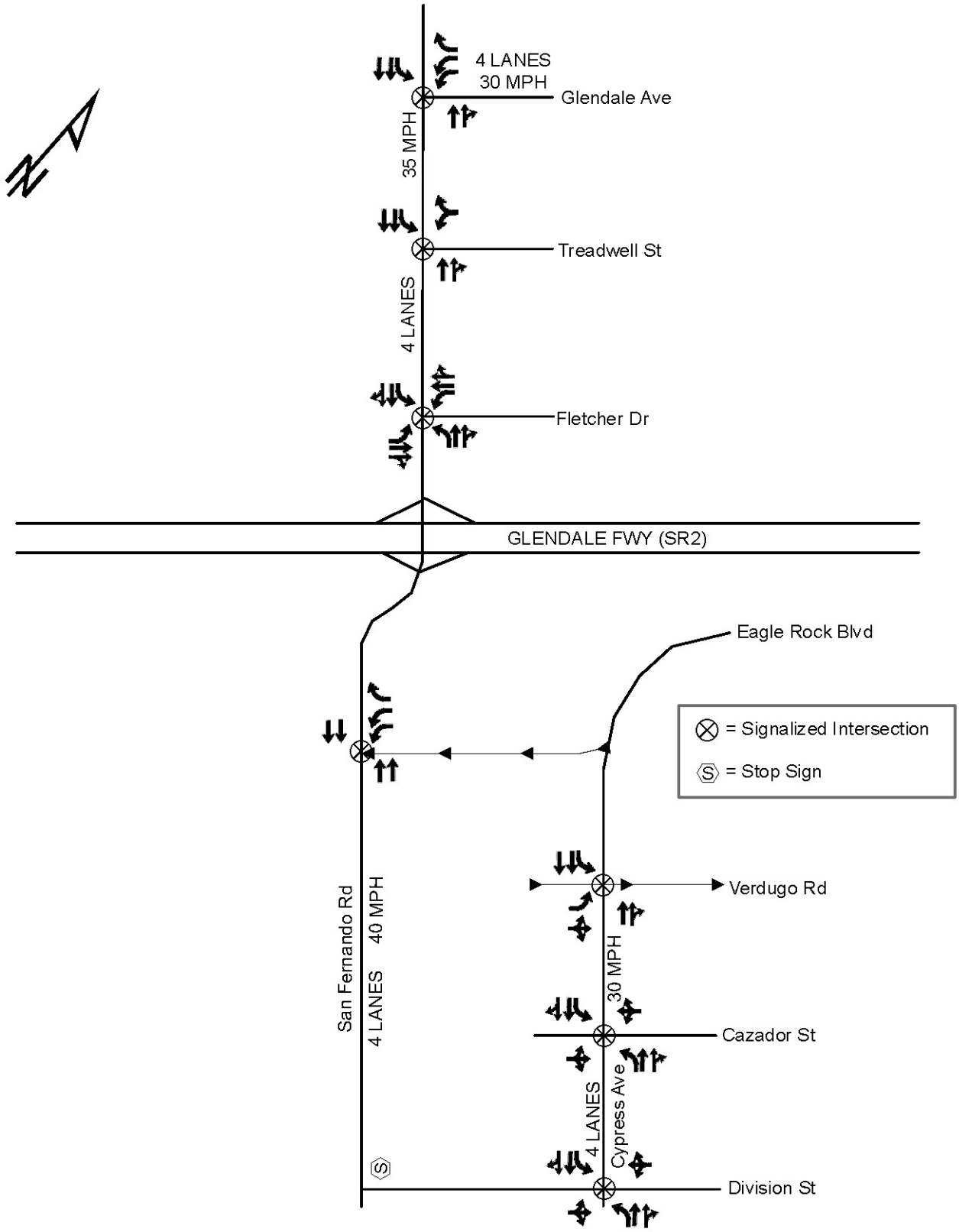
Roadway/Intersection	Jurisdiction
Affected Roadways	
Glendale Avenue – East of San Fernando Road	City of Glendale
San Fernando Road – Glendale Avenue to Tyburn Street	City of Glendale
San Fernando Road – Tyburn Street to Glendale Freeway	City of Los Angeles
San Fernando Road – Beneath Glendale Freeway	Caltrans
San Fernando Road – Glendale Freeway to Edward Avenue	City of Los Angeles
San Fernando Road Frontage Road – Edward Avenue to Eagle Rock Blvd	City of Los Angeles
Cypress Avenue – Eagle Rock Blvd to Division Street	City of Los Angeles
Division Street – Cypress Avenue to San Fernando Road	City of Los Angeles
San Fernando Road – Division Street to Macon Street	City of Los Angeles
San Fernando Road – Elm Street to Chaucer Street (extended)	City of Los Angeles
Affected Signalized Intersections	
San Fernando Road at Glendale Avenue	City of Glendale
San Fernando Road at Treadwell Street	City of Los Angeles
San Fernando Road at Fletcher Drive	City of Los Angeles
San Fernando Road at Glendale Freeway westbound on/off ramps	Caltrans
San Fernando Road at Glendale Freeway eastbound off ramp	Caltrans
San Fernando Road at Eagle Rock Boulevard	City of Los Angeles
Cypress Avenue at Verdugo Road	City of Los Angeles
Cypress Avenue at Cazador Street	City of Los Angeles
Cypress Avenue at Division Street	City of Los Angeles

The roadway characteristics and lane configuration for the affected roadways and intersections are shown on Figure 3.15-1. As shown, Glendale Avenue, San Fernando Road, and Cypress Avenue are four lane roadways. Figure 3.15-2 shows the existing traffic volumes and turning movements at the affected signalized intersections during the morning peak hour and Figure 3.15-3 shows the existing traffic volumes and turning movements at the affected signalized intersections during the afternoon peak hour. The traffic counts at these intersections were taken on Wednesday and Thursday, November 15 and 16, 2006.

To quantify the existing baseline traffic conditions, the study area intersections were analyzed to determine their operating conditions during the morning and afternoon peak hours. Based on the peak hour traffic volumes, the turning movement counts, and the existing number of lanes at each intersection, the volume/capacity (V/C) ratios and levels of service (LOS) have been determined for each intersection, as summarized in Table 3.15-2.

Table 3.15-2 Existing Intersection Levels of Service

Intersection	Volume/Capacity (V/C) Ratio & Level of Service	
	AM Peak Hour	PM Peak Hour
San Fernando Road/Glendale Avenue	0.433 – A	0.567 – A
San Fernando Road/Treadwell Street	0.330 – A	0.453 – A
San Fernando Road/Fletcher Drive	0.502 – A	0.782 – C
San Fernando Road/Eagle Rock Blvd	0.313 – A	0.410 – A
Cypress Avenue/Verdugo Road	0.207 – A	0.293 – A
Cypress Avenue/Cazador Street	0.433 – A	0.553 – A
Cypress Avenue/Division Street	0.400 – A	0.563 – A



N 0 700 1400
Scale in Feet

Figure 3.15-1
Roadway Characteristics and Lane Configuration

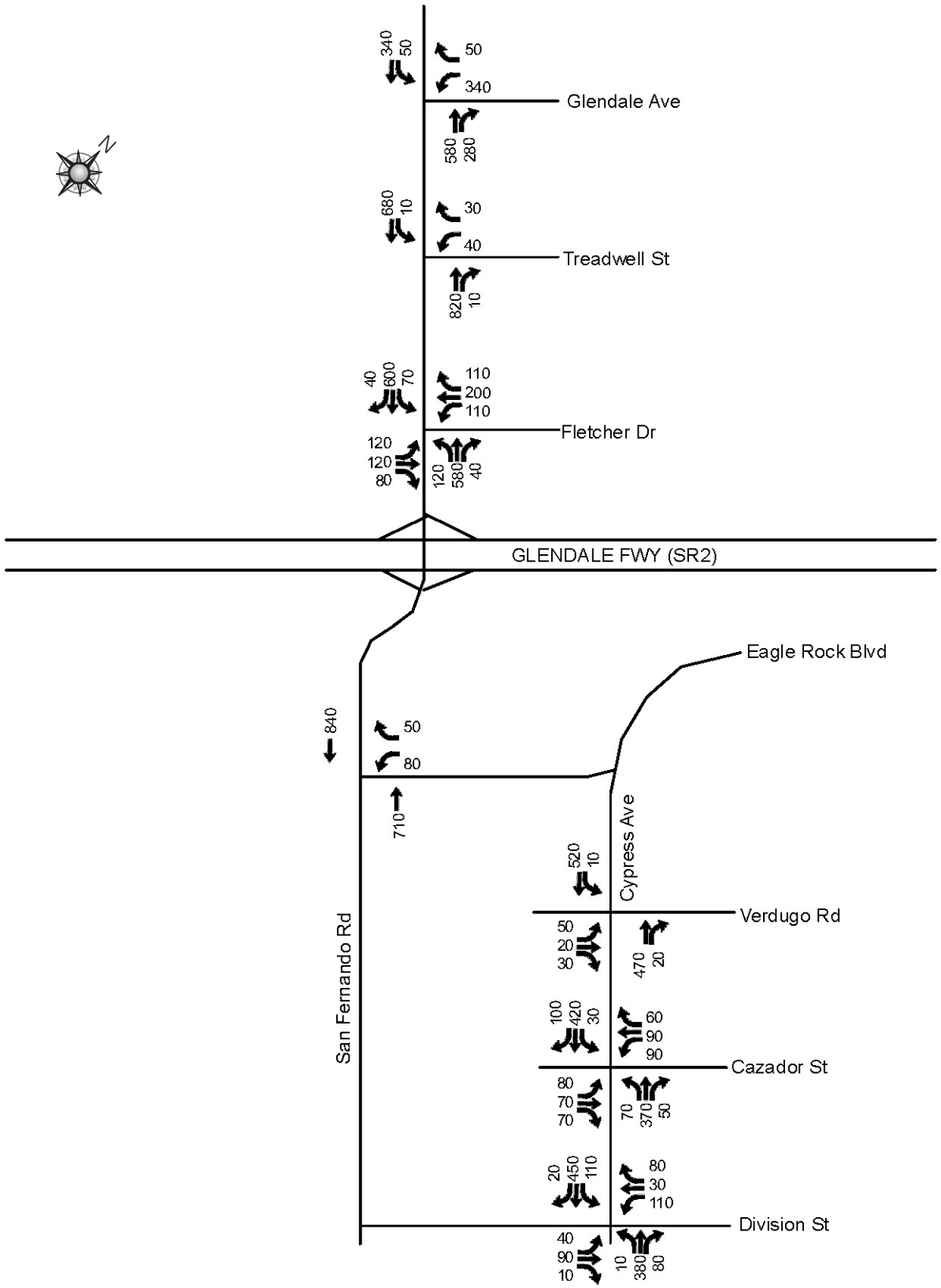


Figure 3.15-2
Existing Traffic Volumes
AM Peak Hour

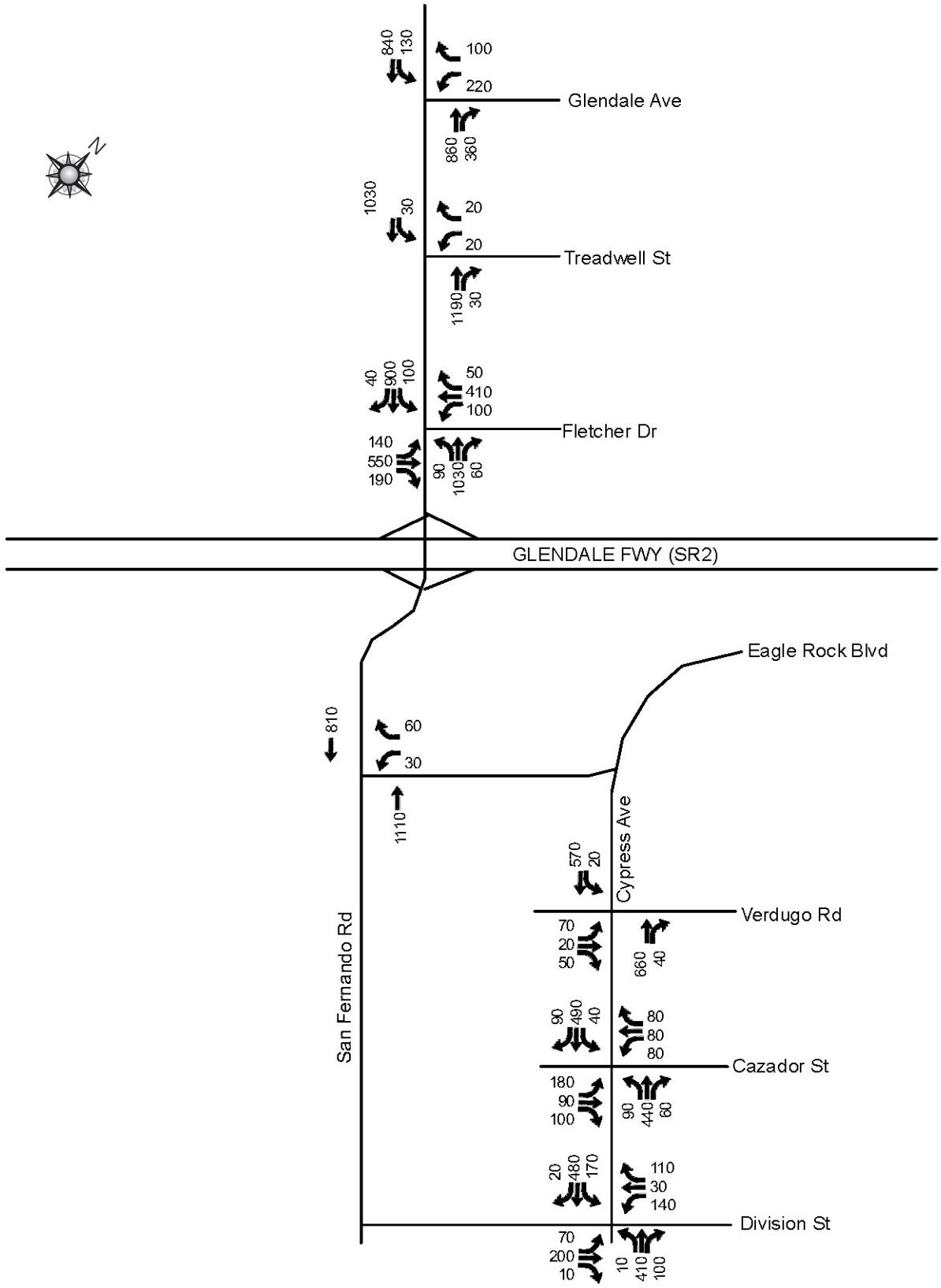


Figure 3.15-3

Existing Traffic Volumes PM Peak Hour

The V/C ratio is a measure of an intersection's traffic volumes as compared to the theoretical capacity of the intersection. LOS is a qualitative indicator of an intersection's operating conditions that is used to represent various degrees of congestion and delay. It is measured from LOS A (excellent conditions) to LOS F (extreme congestion), with LOS A through D typically considered to be acceptable. Table 3.15-3 describes the relationship between V/C ratios and LOS.

Table 3.15-3 Volume/Capacity (V/C) Ratios and LOS

V/C Ratios	LOS
0 to 0.600	A
>0.600 to 0.700	B
>0.700 to 0.800	C
>0.800 to 0.900	D
>0.900 to 1.000	E
>1.000	F

As shown in Table 3.15-2, all of the study area intersections currently operate at LOS A during the morning and afternoon peak hours except for the intersection of San Fernando Road and Fletcher Drive, which operates at LOS C during the afternoon peak hour.

According to the City of Los Angeles Department of Transportation's (LADOT's) "Traffic Study Policies and Procedures," a transportation impact at an intersection shall be deemed significant in accordance with the criteria outlined in Table 3.15-4. A project would not result in a significant impact at an intersection if the intersection were projected to operate at LOS A or B. The criteria also state that a project's impacts would not be significant and that a detailed traffic analysis would not be required if the project would generate fewer than 500 daily trips or fewer than 43 vehicle trips during the peak hour.

Table 3.15-4 LADOT Criteria for Traffic Impacts

Level of Service	Final Volume/Capacity (V/C) Ratio	Project-Related Increase in V/C
C	> 0.700 – 0.800	Equal to or greater than 0.040
D	> 0.800 – 0.900	Equal to or greater than 0.020
E, F	> 0.900	Equal to or greater than 0.010

In addition, the project's impacts would be considered significant if one or more of the following conditions were to occur.

- A major roadway would be closed to through traffic as a result of construction activities.
- Construction activities would result in the closure of a freeway on/off-ramp or the blockage of an intersection at the end of a freeway on/off-ramp during the morning, mid-day, and/or early evening hours (i.e., from 6:00 a.m. to 8:00 p.m.).

Construction Traffic

Construction activities would occur between 6:00 a.m. and 3:30 p.m. Monday through Friday along the proposed TYWRP route north of Tyburn Street (in the City of Glendale) as well as the segment along San Fernando Road south of Edward Avenue to the Taylor Yard. Night time construction (i.e., between 8:00 p.m. and 6:00 a.m.) would occur along San Fernando Road between Tyburn Street (City of Glendale boundary) south to Edward Avenue to avoid traffic congestion per Caltrans and LADOT requirements. However, to determine worst-case traffic impacts, the following construction traffic analysis assumes construction would occur along the route during the daytime hours of 6:00 a.m. and 3:30 p.m.

As stated previously, the first category of construction impacts relates to the level of traffic that would be generated by the construction activities. The anticipated truck volumes as well as the volume of

traffic generated by construction workers and miscellaneous trips have been quantified, as shown in Table 3.15-5. The trip generation characteristics are based on work force estimates and quantities of material that would be transported to and from the project site on a typical day of construction. As the number of trips generated by the construction activities would fluctuate from day to day and from week to week throughout the duration of construction, the traffic volumes shown in the table represent ranges in the levels of traffic that would be generated by the construction activities.

Table 3.15-5 Generated Traffic During Construction

Traffic Category	Daily Traffic	Peak Hour Traffic					
		AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Trucks	10 to 30	2 to 5	2 to 5	4 to 10	2 to 5	2 to 5	4 to 10
Autos/Light-Duty Vehicles	20 to 40	5 to 10	1 to 2	6 to 12	1 to 2	5 to 10	6 to 12
Total	30 to 70	7 to 15	3 to 7	10 to 22	3 to 7	7 to 15	10 to 22

Table 3.15-5 indicates that the construction project would generate from 10 to 22 vehicle trips during the morning and afternoon peak hours and from 30 to 70 trips per day. As the peak hour traffic volumes that would be generated by the project would be well below the LADOT thresholds of 500 daily trips and 43 vehicle trips per hour, the construction generated traffic volumes would not require a detailed traffic impact analysis and the impacts would be less than significant.

The evaluation of construction impacts also includes the physical impacts associated with pipeline construction in the public streets, which constitutes the second category of traffic impacts outlined in the introductory paragraph. This analysis characterizes the traffic impacts that would most likely occur as a result of the traffic disruptions and lane blockages within the road ROW along the proposed pipeline alignment. The streets that would be impacted by these construction activities were listed previously in Table 3.15-1.

The construction of the pipeline would typically require a construction zone that ranges from 20 to 24 feet in width and from 200 to 500 feet in length to accommodate the activities of digging a trench, installing the pipe, back-filling, compacting the fill material, and reconstructing/paving the surface area. It is anticipated that the construction zone would advance linearly along the route at an average rate of 40 to 200 feet per day. Any particular location would be directly impacted by the construction activities for one to five days duration under typical conditions.

The proposed alignment of the pipeline would result in the temporary blockage of two travel lanes at each location where construction would be occurring. As currently proposed, the construction zone would displace the median left turn lane and the adjacent northbound travel lane on San Fernando Road and Cypress Avenue. Two southbound lanes and one northbound lane would continue to accommodate traffic flows through the construction zone.

On the San Fernando Road frontage road north of Hallett Avenue, there are two travel lanes (one northbound and one southbound lane) with parking adjacent to the curb along both sides of the street. The construction zone would displace either the two travel lanes or one travel lane and a parking lane, depending upon the lateral placement of the pipeline ROW within the street. Two-way traffic flow would be accommodated by temporarily restricting on-street parking in the vicinity of the work zone to provide sufficient space for the vehicles to pass by the construction site. It may be necessary to use flaggers if there is only enough width for one travel lane adjacent to the work zone. On the San Fernando Road frontage road south of Hallett Avenue, there is one northbound travel lane and parking along both sides of the street. The construction zone would displace the single travel lane and one parking lane. One northbound travel lane would be accommodated by temporarily restricting on-street parking in the vicinity of the work zone to provide sufficient space for vehicles to pass by the construction site.

Division Street has two travel lanes (one eastbound and one westbound) with parking adjacent to the curb along both sides of the street. The construction zone would displace either the two travel lanes or one travel lane and a parking lane, depending upon the lateral placement of the pipeline ROW within the street. Two-way traffic flow would be accommodated by temporarily restricting on-street parking in the vicinity of the work zone to provide sufficient space for the vehicles to pass by the construction site. It may be necessary to use flaggers if there is only enough width for one travel lane adjacent to the work zone.

On San Fernando Road south of Division Street and on Glendale Avenue east of San Fernando Road, there are four travel lanes (two in each direction). As the construction activities would displace two travel lanes, two-way traffic flow would be accommodated with one lane in each direction adjacent to the construction zone.

To quantify the impacts of the construction project on study area traffic conditions, the intersection levels of service were re-calculated using the assumption that the northbound and southbound left turn lanes and one northbound through lane would be temporarily eliminated while the work zone was at or near the affected intersections. The resulting intersection impacts are shown on Table 3.15-6. The table indicates that the intersections of San Fernando Road at Glendale Avenue and San Fernando Road at Fletcher Drive would be significantly impacted if construction were to occur at these locations during the morning peak period (7:00 to 9:00 a.m.). The table indicates that all of the intersections except for the intersection of Cypress Avenue at Verdugo Road would be significantly impacted if construction were to occur at these intersections during the afternoon peak period (4:00 to 6:00 p.m.).

Table 3.15-6 Project Impacts on Intersection Levels of Service

Intersection	Volume/Capacity (V/C) Ratio & Level of Service			
	Without Project	With Project	Project Impact	Significant?
San Fernando/Glendale				
AM Peak Hour	0.433 – A	0.833 – D	0.400	Yes
PM Peak Hour	0.567 – A	1.047 – F	0.480	Yes
San Fernando/Treadwell				
AM Peak Hour	0.330 – A	0.607 – A	0.277	No
PM Peak Hour	0.453 – A	0.860 – D	0.407	Yes
San Fernando/Fletcher				
AM Peak Hour	0.502 – A	0.761 – C	0.259	Yes
PM Peak Hour	0.782 – C	1.228 – F	0.446	Yes
San Fernando/Eagle Rock				
AM Peak Hour	0.313 – A	0.507 – A	0.194	No
PM Peak Hour	0.410 – A	0.780 – C	0.370	Yes
Cypress/Verdugo				
AM Peak Hour	0.207 – A	0.367 – A	0.160	No
PM Peak Hour	0.293 – A	0.527 – A	0.234	No
Cypress/Cazador				
AM Peak Hour	0.433 – A	0.560 – A	0.127	No
PM Peak Hour	0.553 – A	0.720 – C	0.167	Yes
Cypress/Division				
AM Peak Hour	0.400 – A	0.560 – A	0.160	No
PM Peak Hour	0.563 – A	0.740 – C	0.177	Yes

The significant impacts could be mitigated by prohibiting construction during the peak periods (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.) at the intersections that are shown in Table 3.15-6 to be significantly impacted or by installing the pipeline by jacking underneath these intersections.

The construction project would not result in the total closure of a major roadway to through traffic because traffic would continue to be accommodated through the construction zone regardless of its location along the project alignment. There would, therefore, be no significant impacts associated with roadway closures. The construction activities would, however, result in the temporary blockage of the intersections at the end of the Glendale Freeway (State Route 2) on/off ramps during the critical morning, mid-day, and early evening hours (6:00 a.m. to 8:00 p.m.), which would constitute a significant impact unless night-time construction were implemented at these locations. Jacking underneath the freeway interchange area would eliminate these impacts.

Operational Traffic

The third category of traffic impact, which would be the operational impact after the project is constructed, would be negligible because the completed pipeline would rarely result in the generation of vehicular traffic. The only operational traffic associated with the completed project would be the traffic associated with inspection, maintenance, and repair of the pipeline facility. The traffic volumes generated by these activities would range from one to five vehicles during the peak periods and up to 10 vehicles per day. As these traffic volumes are well below the LADOT thresholds cited earlier, the operational impacts would be less than significant.

Conclusions

In summary, the project would result in a significant impact at several locations relative to the traffic load and capacity of the street system if mitigation measures were not incorporated. With the incorporation of the following mitigation measures, the impacts would be less than significant.

TRA-1 A construction area traffic control plan shall be prepared for each location where construction activities would encroach into the right-of-way of a public roadway. The plan would include, but not be limited to such features as warning signs, lights, flashing arrow boards, barricades, cones, lane closures, parking restrictions, and restricted hours during which lane closures would not be allowed; e.g., 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m., or as directed by the affected public agencies (City of Los Angeles Department of Transportation, the City of Glendale, or Caltrans).

TRA-2 Construction shall not occur at the following locations and the existing number of travel lanes shall be provided during the designated peak periods; i.e., 7:00 to 9:00 a.m. and/or 4:00 to 6:00 p.m. or as specified by the affected public agency. This condition shall be applicable for the San Fernando Road/Glendale Avenue intersection (a.m. and p.m.), San Fernando Road/Treadwell Street intersection (p.m. only), San Fernando Road/Fletcher Drive intersection (a.m. and p.m.), San Fernando Road/Eagle Rock Boulevard intersection (p.m. only), Cypress Avenue/Cazador Street intersection (p.m. only), and Cypress Avenue/Division Street (p.m. only). Alternatively, the pipeline could be installed by jacking underneath the impacted intersections, subject to approval by LADOT or the City of Glendale.

TRA-3 Construction shall not occur at the intersections where the Glendale Freeway eastbound and westbound on/off ramps intersect with San Fernando Road and the existing number of travel lanes shall be provided during the morning, mid-day, and evening periods; i.e., from 6:00 a.m. to 8:00 p.m. or as specified by Caltrans.

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?

LESS THAN SIGNIFICANT IMPACT. The Los Angeles County Congestion Management Program (CMP) indicates that a project may have a significant impact and that a traffic study would be required if the project would contribute 50 or more peak hour vehicle trips to a designated CMP

intersection and/or if the project would add 150 or more peak hour trips in either direction to a designated CMP freeway monitoring location. As detailed in the response to Question 3.15(a), construction of the project would generate up to 22 trips during the peak hour and 70 trips per day and operation of the project would generate up to five trips during the peak hour and 10 trips per day. As these traffic volumes are well below the CMP thresholds, a detailed CMP analysis is not required and the project would not have a significant impact at a CMP intersection or on the freeway network. The project would not exceed a level of service standard established by the congestion management agency.

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. The proposed project would be a buried pipeline, and therefore would have no impact on air traffic patterns or safety.

d. Would the project substantially increase hazards because of a design feature or incompatible uses?

LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED. Construction of the proposed pipeline project within the public ROW would potentially result in increased hazards to motorists, bicyclists, and pedestrians because the construction activities would occur within the travel lanes of various roadways, as detailed in the response to Question 3.15(a), above. In addition, the project alignment would cross various sidewalks, pedestrian crosswalks, and bike routes along the project corridor. These conflicts would result in safety risks; however, the impacts would be less than significant with implementation of Mitigation Measure TRA-1, which is a construction area traffic control plan presented in the response to Question 3.15(a), as well as Mitigation Measure TRA-4 presented below.

TRA-4 Provide alternative pedestrian and bicycle access/circulation routes where existing facilities such as sidewalks, crosswalks, and bike lanes would be obstructed by construction activities.

e. Would the project result in inadequate emergency access?

LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED. The project would potentially result in a significant impact relative to emergency access because the construction activities within the public ROW could increase the response times for emergency vehicles (police, fire, and ambulance/paramedic units) and block or disrupt access to adjacent properties. The impacts would be significant if the construction activities would restrict access to or from adjacent land uses with no suitable alternative access and/or if the construction activities would restrict the movements of emergency vehicles (police vehicles, fire vehicles, and ambulance/paramedic units) and there would be no reasonable alternative access routes available. These impacts would be less than significant because of the implementation of Mitigation Measure TRA-1, as presented in the response to Question 3.15(a), as well as Mitigation Measures TRA-5 and TRA-6 presented below.

TRA-5 Coordinate with emergency service providers (police, fire, and ambulance/paramedic agencies) prior to construction to provide information regarding lane closures, construction schedules, driveway blockages, etc. and to develop a plan to maintain or accommodate essential emergency access routes; e.g., plating over excavations, use of detours, etc.

TRA-6 Provide advance notification to affected property owners, businesses, residents, etc. of possible driveway blockages or other access obstructions and implement alternate access and parking provisions where necessary.

f. Would the project result in inadequate parking capacity?

LESS THAN SIGNIFICANT IMPACT. The project would result in temporary on-street parking restrictions along San Fernando Road, the San Fernando Road frontage road, Cypress Avenue, and Division Street during the times when the construction activities occur at each affected location. The impacts would be less than significant because the duration of the parking displacement at any particular location would be short-lived (from two to five days) and because alternative parking would be available outside the limits of the construction zone. The construction project would also generate a parking demand associated with construction workers and equipment. The impacts of this parking demand would be less than significant because an off-street staging area would be provided at or near the project alignment to store vehicles and equipment.

g. Would the project conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED. The project could potentially result in disrupted public transit service, including schedule delays and blocked bus stops, as the construction activities would occur at locations that are adjacent to MTA bus routes. The impacts would be significant if the construction activities would disrupt bus service and there would be no suitable alternative routes or bus stops. These impacts would be less than significant with implementation of Mitigation Measure TRA-1, as presented in the response to Question 3.15 (a), as well as Mitigation Measure TRA-7 presented below.

TRA-7 Coordinate with public transit agencies (e.g. MTA) to provide information regarding lane closures, bus stop disruptions, etc. and to designate alternate pick-up/drop-off locations if appropriate.

3.16 Utilities and Service Systems

UTILITIES AND SERVICE SYSTEMS - Would the project:	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?	☐	☐	☒	☐
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e. Result in a determination by the wastewater treatment provider, which serves or may serve the project determined that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g. Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

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, and the City of Glendale Public Works Department.

The City of Los Angeles 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 City of Glendale Public Works Department's service encompasses 365 miles of streets; 340 miles of sewers; 1,300 catch basins; and 50 debris basins. For both the City of Los Angeles and the City of Glendale, the Hyperion Treatment Plant (HTP) provides wastewater treatment needs. The current Year 2006 daily average dry weather flow capacity of the HTP is 450 million gallons per day (mgd), and treat an average dry weather flow of approximately 362 mgd (City of Los Angeles Bureau of Sanitation, 2006). 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 would be considered a short-term minimal impact and would not result in a permanent increase in wastewater contribution to the HTP. Upon completion of the proposed TYWRP pipeline, 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 RWQCB and would not result in 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 the response to Question 3.16(a), the existing wastewater treatment facilities serving the TYWRP route would be adequate to provide wastewater services during construction and operation of the proposed project. Less than significant impacts would occur to wastewater treatment facilities serving the proposed project.

LADWP is responsible for supplying, conserving, treating, and distributing water for the City of Los Angeles. Within the City of Glendale, Glendale Water and Power (GWP) supplies the potable water for the City. Both the LADWP and GWP obtain water from wells in the local groundwater basin, the Los Angeles Aqueduct System, water purchased from the Metropolitan Water District of Southern California, and 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 minimal and would not impact the local water supply. Operation of the TYWRP would not result in increased potable water use. In fact, with implementation of the TYWRP, less potable water would be used because the proposed project would allow the use of recycled water for landscape irrigation. 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. During construction, catch basins and storm drain piping would be relocated to maintain existing drainage. Upon completion of pipeline construction activities, replacement (as needed) of any existing on-site storm drains would occur as part of the repaving

activities. Existing drainage patterns would not be altered, and no existing stormwater infrastructure would be removed or replaced during construction.

d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

LESS THAN SIGNIFICANT IMPACT. As stated above in the response to Question 3.16(a) and (b), the existing water and wastewater treatment facilities serving the TYWRP are anticipated to be adequate to provide wastewater, domestic potable water service, and fire flows for the area. In addition, as a recycled water pipeline project, the TYWRP does not require potable water supplies.

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?

LESS THAN SIGNIFICANT IMPACT. As stated above in the response to Question 3.16(a), the existing wastewater treatment facilities serving the TYWRP are anticipated to continue to provide wastewater services for the area. As a recycled water pipeline project, the TYWRP would not require the construction of new wastewater treatment facilities or the expansion of existing facilities.

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. Within the City of Glendale, the Glendale Public Works Department is responsible for trash collection. The only public landfill located in the City of Glendale is Scholl Canyon Landfill, which is operated by the Los Angeles County Sanitation Districts.

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, one unclassified (inert waste) landfills (Azusa Land Reclamation) in Los Angeles County is permitted to accept only inert waste, including construction/demolition debris. The most recent permitted disposal capacity, remaining capacity, and permit status for the landfills serving the TYWRP area are also shown in Table 3.16-1.

Table 3.16-1 Existing Landfills Available to the Project Site

Name	Location	Permitted Daily Disposal (Tons)	Remaining Capacity (Million Cubic Yards)	Permit Expiration Date
Scholl Canyon Landfill (Class III)	Glendale	3,400	69.2 (calculated in 2005)	2019
Sunshine Canyon (Class III)	Sylmar	6,600	23.7 (calculated 2003)	2008
Bradley Landfill West (Class III)	Sun Valley	10,000	38.6 (calculated 2002)	2007
Azuza Land Reclamation (Unclassified)	Azusa	6,500	66.7 (calculated 1996)	2025

Sources: Scholl Canyon Landfill: http://www.ciwmb.ca.gov/SWIS/detail.asp?PG=DET&SITESCH=19-AA-0012&OUT=HTML, Sunshine Canyon Landfill: http://www.ciwmb.ca.gov/SWIS/detail.asp?PG=DET&SITESCH=19-AA-0853&OUT=HTML, Bradley Landfill West: http://www.ciwmb.ca.gov/SWIS/detail.asp?PG=DET&SITESCH=19-AR-0008&OUT=HTML, Azuza Land Reclamation Landfill: http://www.ciwmb.ca.gov/SWIS/detail.asp?PG=DET&SITESCH=19-AA-0013&OUT=HTML; all accessed via California Integrated Waste Management Board, California Waste Facilities, Sites, & Operations (SWIS) Database, accessed from http://www.ciwmb.ca.gov/SWIS on September 25, 2006.

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 unclassified landfill likely to be used for disposal of demolition and construction debris.

The known total permitted daily disposal at the four identified landfills serving the area is 26,500 tons. While the TYWRP would increase solid waste generation as a result of construction activities (broken pavement, soil spills, construction waste), it is not anticipated that the tons per day of solid waste generated would account for a significant percent of the total daily permitted capacity available. Therefore, waste generated by demolition and construction activities would not exceed the available capacity at the landfills serving the TYWRP area that would likely accept 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. Upon completion of the TYWRP pipeline, 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, operation of the proposed project would not introduce any increase in solid waste contribution to the landfill facilities serving the proposed project area.

g. Comply with federal, state, and local statutes and regulations related to solid waste?

LESS THAN SIGNIFICANT IMPACT. As stated above in the response to Question 3.16(f), existing solid waste facilities serving the TYWRP 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. As standard practice, 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 project, 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 pipeline operations. Therefore, solid waste associated with operation of the TYWRP would not introduce any increase in solid waste generation to the landfill facilities serving the project area. Recycling activities during construction would ensure that the TYWRP 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.

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?	☐	☐	☒	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
c. Does the project have environmental effects, which would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

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. The preceding analyses conclude that no significant unmitigated impacts to the environment would occur. Based on these findings, the proposed project is not expected to degrade the quality of the environment. The TYWRP route is almost entirely covered with impervious surfaces in the form of existing roadways. The route contains no landscaping and does not support sensitive species. The project would not require the removal of trees or plant species. Because the proposed project route environment is developed with impervious surfaces and characterized by high levels of human activity, the project would not 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), there are no known historic or prehistoric resources in the proposed project ROW and implementation of the mitigation measures in Section 3.5 would ensure that any impacts to previously undiscovered resources 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.)

LESS THAN SIGNIFICANT IMPACT. A significant impact may occur if the proposed project, in conjunction with other related projects, would result in impacts that are less than significant when viewed separately but would be significant when viewed together. As described above for the different issue areas, construction and operation of the proposed project would result in minimal impacts. While construction of the proposed project would result in some significant impacts, these impacts would be reduced to less than significant levels with the implementation of mitigation measures. Therefore, as concluded in the above analyses, the proposed project's incremental contribution to cumulative impacts related to aesthetics, agricultural resources, air quality, biological resources, cultural resources, geology/seismic hazards, hazards/hazardous materials, hydrology/water

quality, land use/planning, mineral resources, noise, population/housing, public services, recreation, transportation/traffic, and utilities would be less than significant. There may be environmental impacts which are individually limited but significant when viewed in connection with the effects of future projects. However, these cumulative impacts will be mitigated to a level of insignificance by implementing the mitigation measures identified in this Initial Study.

c. Does the project have environmental effects, which would cause substantial adverse effects on human beings, either directly or indirectly?

LESS THAN SIGNIFICANT IMPACT. As described in the response to Question 3.17(b), and in the analyses of the environmental effects above, all of the significant impacts that could result from the proposed project would be reduced to less than significant levels with the implementation of mitigation measures.

4. References

California Department of Conservation.

CDFG (California Department of Fish and Game). 2006. Status of NCCP Planning Efforts Webpage. [online] http://www.dfg.ca.gov/nccp/status.htm#CALFED. Accessed September 29, 2006. Modified July 24.

_____. 2005. California Digital Conservation Atlas. [online] http://atlas.resources.ca.gov/atlas/app.asp. Accessed September 29, 2006. Updated December 1.

_____. 2003. California Department of Fish and Game Natural Diversity Database. Version 3.0.5.

City of Glendale. 2006. Telephone communication between Sergeant Steve Carey of the Patrol Bureau and Scott Debauche, Aspen Environmental Group. October 2.

_____. 1993. General Plan Conservation Element.

City of Glendale Fire Department. 2006a. Fire Station Index. [online] http://www.fire.ci.glendale.ca.us/firestations.html. Accessed October 2.

_____. 2006b. Fire Station 22 Information Page. [online] http://www.fire.ci.glendale.ca.us/firestations/fs22.html. Accessed October 2.

City of Los Angeles. 2001. City of Los Angeles General Plan Conservation Element Section 18: Resource Management: Mineral Resources (Sand and Gravel). [online] http://www.ci.la.ca.us/PLN/Cwd/GnlPln/ConsvElt.pdf. Accessed September 28, 2006.

_____. 1996a. City of Los Angeles General Plan Safety Element, Exhibit A. November 26.

_____. 1996b. City of Los Angeles General Plan Safety Element, Exhibit B. November 26.

_____. 1996c. City of Los Angeles General Plan Safety Element, Exhibit C. November 26.

_____. 1996d. City of Los Angeles General Plan Safety Element, Exhibit D. November 26.

_____. 1996e. City of Los Angeles General Plan Safety Element, Exhibit F. November 26.

_____. 1996f. City of Los Angeles General Plan Safety Element, Exhibit G. November 26.

City of Los Angeles Bureau of Sanitation. 2006. Wastewater Collection and Treatment Website. [online] http://www.lacity.org/san/sanmact.htm. Accessed October 2.

City of Los Angeles Police Department. 2006. Telephone communication between Office Tanya Hanamaikai, Crime Prevention Unit, Community Relations Section and Scott Debauche, Aspen Environmental Group. October 2.

County of Los Angeles, 2007. Department of Health Services Public Health Programs and Services - Environmental Health Cross-Connection & Water Pollution Control Program *"A Guide to Safe Recycled Wastewater Use, Pipeline Construction and Installation"*, accessed online at: http://www.lapublichealth.org/eh/docs/ehcrossrecycle.pdf on February 16.

County of Los Angeles, Department of Regional Planning. 2006. General Plan Update Program. Draft County of Los Angeles General Plan Significant Ecological Areas (SEAs). [online] http://planning.co.la.ca.us/doc/gp/gpMaps/09pdf_SEA_policy.pdf. Accessed September 29, 2006.

DOC (California Department of Conservation). 2006. Seismic Hazards Zone Mapping Program for the City of Los Angeles and City of Glendale. [online] http://www.consrv.ca.gov/cgs/shzp/affected.htm. Accessed October 2.

_____. 2004a. Farmland Mapping and Monitoring Program 2004 Los Angeles County. [online] ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/2004. Accessed September 28, 2006.

_____. 2004b. California Williamson Act 2004 Geographic Information System data as of 1-1-2004. [online] ftp://ftp.consrv.ca.gov/pub/dlrp/WA/Map%20and%20PDF/CALIFORNIA%20WILLIAMSON%20ACT/CA%20WA%202004.pdf. Accessed September 28, 2006.

_____. 2001. California Geological Survey Library California Minerals and Mines CD-ROM Map. DMG CD 2000-001

EDR (Environmental Data Resources, Inc.). 2006. EDR DataMap® Corridor Study Taylor Yard, California, 90001. October 30.

FTA (Federal Transit Administration). 1995. Transit Noise and Vibration Impact Assessment. April.

Los Angeles Fire Department. 2006a. LAFD Information Website. [online] http://www.lafd.org/about.htm. Accessed October 2.

_____. 2006b. Fire Station 50 Information Page. [online] http://www.lacity.org/distlookup. Accessed October 2.

McKenna et al. 2006. Results of a Phase I Cultural Resource Investigation for the Proposed Los Angeles Department of Water and Power Taylor Yard Water Recycling Project, Located in the Glendale and Glassell Park Areas of Los Angeles County, California. October 11.

Zimas (Zone Information & Map Access System). 2006. LA City Planning Department. [online] http://zimas.lacity.org. Accessed October 2.

5. Report Preparation

Table 5-1 List of Preparers and Reviewers

Name/Organization	Project Role
Los Angeles Department of Water and Power	
Tania Bonfiglio, Environmental Supervisor	Project Manager
Jennifer Barrick, Project Manager Supervisor	CEQA Document Review
Amy Webb, Project Manager	CEQA Document Review
Mark Sedlacek, Director of Environmental Services	CEQA Document Review
Aspen Environmental Group	
Negar Vahidi	CEQA Project Manager
Jacob Hawkins	Project Assistant, Project Description, Aesthetics, Agricultural Resources, Biological Resources, Cultural Resources, Land Use and Planning, Mandatory Findings of Significance
Scott Debauche	Air Quality, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, Transportation and Traffic, Utilities and Service Systems
Leigh Hagan	Public Outreach
Brewster Birdsall	Air Quality
Kati Simpson	Graphics
Judy Spicer	Document/Production Coordinator
McKenna et al.	
Jeanette McKenna	Cultural Resources
Garland Associates, Inc.	
Richard Garland	Traffic and Transportation

APPENDIX 1
AIR QUALITY TECHNICAL APPENDIX

Table AQ-1: Onroad Emissions

Passenger Vehicles (Commuters/Crew)

Pollutant	(pounds/mile)	miles/trip	trips/day	pounds/day
CO	0.012820	30	40	15.38
NOx	0.001361	30	40	1.63
ROG	0.001383	30	40	1.66
SOx	0.000009	30	40	0.01
PM10	0.000080	30	40	0.10
fugitive PM10	0.000098	30	40	0.12

Heavy-Heavy Duty Trucks (Equipment Delivery)

	(pounds/mile)	miles/trip	trips/day	pounds/day
CO	0.005520	20	30	3.31
NOx	0.035635	20	30	21.38
ROG	0.001227	20	30	0.74
SOx	0.000046	20	30	0.03
PM10	0.000644	20	30	0.39
fugitive PM10	0.008945	20	30	5.37

Total Onroad Emissions

Pollutant	pounds/day	
CO	**18.70**	
NOx	**23.01**	
ROG	**2.40**	
SOx	**0.04**	
PM10 Tailpipe	**0.48**	
PM10 fugitive	**5.48**	(Road Dust)

Assumptions:

EMFAC 2002 Version 2.2 Scenario Year: 2007 -- Model Years: 1965 to 2007

AP-42, Fifth Addition, Section 13.2.1; Table 13.2.1-1 (fugitive PM10)

Table AQ-2: Offroad Equipment Use Assumptions

Open Trench Excavation		Eq. Use
Equipment	**hp**	**hr/day**
Backhoe - 436C	89	6
Loader - 962G	200	6
Excavator/Pipelayer 315B	99	6
Compactor 224C	90	4
Crane - Link Belt Hylab 5	187	2

Pipe Jacking		Eq. Use
Equipment	**hp**	**hr/day**
Diesel Generator 40kW	50	8
Welding Truck Generator	50	8
Auger Bore Machine - 8.2L	205	8
Hydraulic Jack	205	8
Excavator/Pipelayer 315B	99	8
Crane - Link Belt Hylab 5	187	2

Notes:

- Water truck, dump trucks, and utility trucks are onroad equipment, see onroad calculations
- The welding truck, an onroad vehicle, includes a 50 hp diesel generator

Table AQ-3: Offroad Equipment Emissions

Open Trench Excavation		Eq. Use			CO	NOx	ROG	SOx	PM10		CO	NOx	ROG	SOx	PM10
Equipment	hp	hr/day	Tier	Categ hp	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	Load Fac	lb/day	lb/day	lb/day	lb/day	lb/day
Backhoe - 436C	89	6	0	120	0.37479981	0.6979432	0.11789846	0.0006068	0.0634794	1	2.25	4.19	0.71	0.00	0.38
Loader - 962G	200	6	0	composite	0.64250895	1.3849276	0.175945	0.00119623	0.07688366	1	3.86	8.31	1.06	0.01	0.46
Excavator/Pipelayer 315B	99	6	0	120	0.55042053	1.03054417	0.17861405	0.00086364	0.09631992	1	3.30	6.18	1.07	0.01	0.58
Compactor 224C	90	4	0	50	0.32615741	0.29418578	0.13557867	0.00036184	0.03237171	1	1.30	1.18	0.54	0.00	0.13
Crane - Link Belt Hylab 5	187	2	0	175	0.49747217	1.10085798	0.14174698	0.00090401	0.06147469	1	0.99	2.20	0.28	0.00	0.12

Pipe Jacking		Eq. Use			CO	NOx	ROG	SOx	PM10		CO	NOx	ROG	SOx	PM10
Equipment	hp	hr/day	Tier	Categ hp	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	Load Fac	lb/day	lb/day	lb/day	lb/day	lb/day
Diesel Generator 40kW	50	8	0	50	0.30761461	0.31968783	0.12935807	0.00039588	0.03181877	1	2.46	2.56	1.03	0.00	0.25
Welding Truck Generator	50	8	0	50	0.31693333	0.282451	0.13921822	0.00033557	0.03168163	1	2.54	2.26	1.11	0.00	0.25
Auger Bore Machine - 8.2L	205	8	0	composite	0.538766	1.47336809	0.14567127	0.0017469	0.0647803	1	4.31	11.79	1.17	0.01	0.52
Hydraulic Jack	205	8	0	composite	0.538766	1.47336809	0.14567127	0.0017469	0.0647803	1	4.31	11.79	1.17	0.01	0.52
Excavator/Pipelayer 315B	99	8	0	120	0.55042053	1.03054417	0.17861405	0.00086364	0.09631992	1	4.40	8.24	1.43	0.01	0.77
Crane - Link Belt Hylab 5	187	2	0	175	0.49747217	1.10085798	0.14174698	0.00090401	0.06147469	1	0.99	2.20	0.28	0.00	0.12

Source: South Coast Air Basin Fleet Average. 2007 year OFFROAD factors from SCAQMD.
Emission factors sent by ARB on December 7, 2006 in grams per hour. EF converted by SCAQMD to pounds per hour.

Offroad Total (Excavation):	11.71	22.06	3.66	0.02	1.67
Offroad Total (Jacking):	19.01	38.84	6.19	0.04	2.44

Table AQ-4a: Fugitive Dust Calculations - Uncontrolled Emissions

Excavator Trenching		
	Value	Notes
E = (0.75)(0.0021)(d^0.7)/(M^0.3)		E = lbs PM10/yd3 excavated
d = drop height =	5	ft (estimate)
M = moisture content =	2.0%	(SCAQMD CEQA Handbook Table A9-9-G-1, Dry Soil)
E = emission factor =	0.0039	lb/yd3
Open Trench Excavation Rate =	500.0	yd3/day (500 ft L x 2.7 ft W x 10 ft D / 27ft3/yd3)
Pipe Jacking Excavation =	355.6	yd3/day (40 ft L x 12 ft W x 20 ft D / 27ft3/yd3)
Peak Daily Excavation Rate =	500	yd3/day
Emissions =	1.97	lbs/day

Source: AP-42, Table 11.9-2 (dragline operations), 10/98

Material Unloading		
	Value	Notes
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 (Burbank)
M = moisture content =	2.0%	(SCAQMD CEQA Handbook Table A9-9-G-1, Dry Soil)
E = emission factor =	0.00508	lb/ton
Peak Daily Unloading Rate =	500	yd3/day (see excavator trenching assumptions)
	650	tons/day (assumes 2600 lbs/yd3 for moist soil)
Emissions =	3.30	lbs PM10/day

Source: AP-42, p. 13.2.4-3, 1/95

Grading - Street Restoration		
	Value	Notes
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 Restoration Rate =	0.38	VMT/day (500 feet/pass, 4 passes/day)
	0.10	lbs PM10/day

Source: AP-42, Table 11.9-2, 10/98

Wind erosion of active construction area		
	Value	Notes
Level 2 Emission Factor =	0.011	ton/acre-month
Level 2 Emission Factor =	0.7	lbs/acre-day (30 days/month)
Level 2 Emission Factor =	1.68E-05	lbs/sqft-day
Daily Active Area =	2700	sqft (1000 ft L x 2.7 ft W)
Emissions	0.05	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

Daily Fugitive Dust Emission Estimate =	**5.43**	**lbs PM10/day**

Emission Factor Calculation
Equipment on Paved Roads

	k (lb/vmt)	sL (g/m2)	W (tons)	E (lb/vmt)
Passenger Vehicles	0.016	0.03	2	0.000098
Heavy Duty Trucks	0.016	0.03	13	0.008945

sL = 0.03 g/m2, hi ADT highways (EPA AP-42 Table 13.2.1-3)

Emission Factor: k (sL/2)^0.65 (W/3)^1.5 - C

where: E = particulate emission factor (having units matching the units of k)
k = base emission factor (lb/vehicle miles traveled)
sL = road surface silt loading (grams per square meter) (g/m2)
W = fleet average weight (tons) of the heavy vehicles
C = 0.00047 lb/vmt, correction factor for exhaust

Source: Section 13.2.1 of USEPA Compilation of Air Pollutant Emission Factors (AP-42), 11/06.

Table AQ-4b: Fugitive Dust Calculations - Controlled Emissions

Excavator Trenching		
	Value	Notes
E = (0.75)(0.0021)(d^0.7)/(M^0.3)		E = lbs PM10/yd3 excavated
d = drop height =	5	ft (estimate)
M = moisture content =	15.0%	(SCAQMD CEQA Handbook Table A9-9-G-1, Moist Soil)
E = emission factor =	0.0022	lb/yd3
Open Trench Excavation Rate =	500.0	yd3/day (500 ft L x 2.7 ft W x 10 ft D / 27ft3/yd3)
Pipe Jacking Excavation =	355.6	yd3/day (40 ft L x 12 ft W x 20 ft D / 27ft3/yd3)
Peak Daily Excavation Rate =	500	yd3/day
Emissions =	1.08	lbs/day

Source: AP-42, Table 11.9-2 (dragline operations), 10/98

Material Unloading		
	Value	Notes
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 (Burbank)
M = moisture content =	15.0%	(SCAQMD CEQA Handbook Table A9-9-G-1, Dry Soil)
E = emission factor =	0.00030	lb/ton
Peak Daily Unloading Rate =	500	yd3/day (see excavator trenching assumptions)
	650	tons/day (assumes 2600 lbs/yd3 for moist soil)
Emissions =	0.20	lbs PM10/day

Source: AP-42, p. 13.2.4-3, 1/95

Grading - Street Restoration		
	Value	Notes
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 =	0.04	lb/VMT (with 85% control)
Daily Restoration Rate =	0.38	VMT/day (500 feet/pass, 4 passes/day)
	0.02	lbs PM10/day

Source: AP-42, Table 11.9-2, 10/98

Wind erosion of active construction area		
	Value	Notes
Level 2 Emission Factor =	0.011	ton/acre-month
Level 2 Emission Factor =	0.7	lbs/acre-day (30 days/month)
Level 2 Emission Factor =	2.525E-06	lbs/sqft-day (with 85% control)
Area of construction =	2700	sqft (1000 ft L x 2.7 ft W)
Emissions	0.01	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

Daily Fugitive Dust Emission Estimate =	**1.30**	**lbs PM10/day**

Table AQ-5a: Maximum Daily Uncontrolled Construction Emissions (lbs/day)

	Onroad Emissions	Offroad Emissions (Excavation)	Offroad Emissions (Jacking)	Fugitive Dust	Maximum Daily Emissions
CO	18.70	11.71	19.01	---	37.71
NOx	23.01	22.06	38.84	---	61.85
ROG	2.40	3.66	6.19	---	8.59
SOx	0.04	0.02	0.04	---	0.08
PM10	5.97	1.67	2.44	5.43	13.83

- Maximum Daily Emissions based on Pipe Jacking

Table AQ-5b: Maximum Daily Mitigated Construction Emissions (lbs/day)

	Onroad Emissions	Offroad Emissions (Excavation)	Offroad Emissions (Jacking)	Fugitive Dust*	Maximum Daily Emissions
CO	18.70	11.71	19.01	---	37.71
NOx	23.01	22.06	38.84	---	61.85
ROG	2.40	3.66	6.19	---	8.59
SOx	0.04	0.02	0.04	---	0.08
PM10	5.97	1.67	2.44	1.30	9.70

- Maximum Daily Emissions based on Pipe Jacking

* Includes maintaining soil moisture content over 15% and implementation of Rule 403 watering requirements

APPENDIX 2
PHASE I CULTURAL RESOURCES INVESTIGATION

RESULTS OF A PHASE I CULTURAL RESOURCE INVESTIGATION FOR THE PROPOSED LOS ANGELES DEPARTMENT OF WATER AND POWER TAYLOR YARD PARK WATER RECYCLING PROJECT, LOCATED IN THE GLENDALE AND GLASSELL PARK AREAS OF LOS ANGELES COUNTY, CALIFORNIA

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

RESULTS OF A PHASE I CULTURAL RESOURCE INVESTIGATION FOR THE PROPOSED LOS ANGELES DEPARTMENT OF WATER AND POWER TAYLOR YARD PARK WATER RECYCLING PROJECT, LOCATED IN THE GLENDALE AND GLASSELL PARK AREAS OF LOS ANGELES COUNTY, CALIFORNIA

by,

Jeanette A. McKenna, Principal
McKenna et al., Whittier CA

INTRODUCTION

The Los Angeles County Department of Water and Power (LADWP) proposes to complete the Taylor Yard Park Water Recycling Project in the Glendale and Glassell Park areas of Loc Angeles County. As currently described, the project is being designed to provide recycled water from the existing Los Angeles-Glendale Water Reclamation Plant to the Taylor Yard. The reclaimed water will be used for landscaping and industrial purposes. The proposed pipeline will connect the existing pipeline (which ends in the southernmost part of the City of Glendale and will extent to the Taylor Yard via San Fernando Road. The proposed pipeline will consist of 2.3 miles of 16-inch ductile pipe within the San Fernando Road right-of-way and will be placed using open trench excavation and/or pipe-jacking. Pipeline depth will vary from seven to twelve feet below current grade. The cultural resource investigations for this project were initiated by McKenna et al. (Appendix A) under contract to Aspen Environmental Group of Agoura Hills, and address the proposed pipeline route along San Fernando Road, between Glendale Avenue and Elm Street. This technical report has been prepared for compliance with the California Environmental Quality Act (CEQA), as amended.

PROJECT DESCRIPTION

The Taylor Yard Park Water Recycling Project is being designed to provide recycled water from the existing Los Angeles-Glendale Water Reclamation Plant to the Taylor Yard. An existing pipeline terminates on Glendale Avenue in south Glendale. The project will require the construction of additional pipeline from Glendale Avenue, via San Fernando Road, to the Taylor Yard Park facility (Figures 1-4).

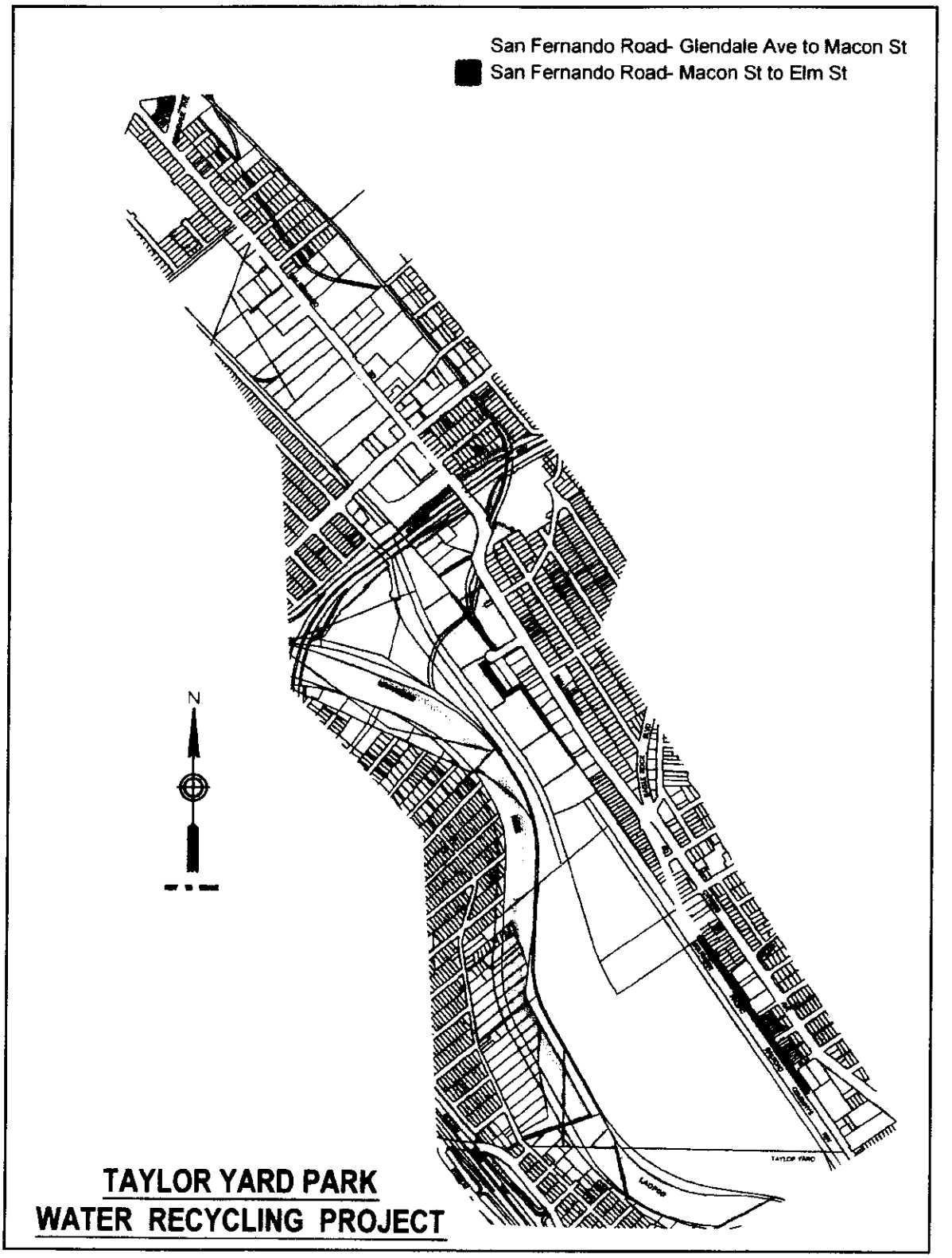

Figure 1. Proposed Taylor Yard Park Pipeline Alignment.

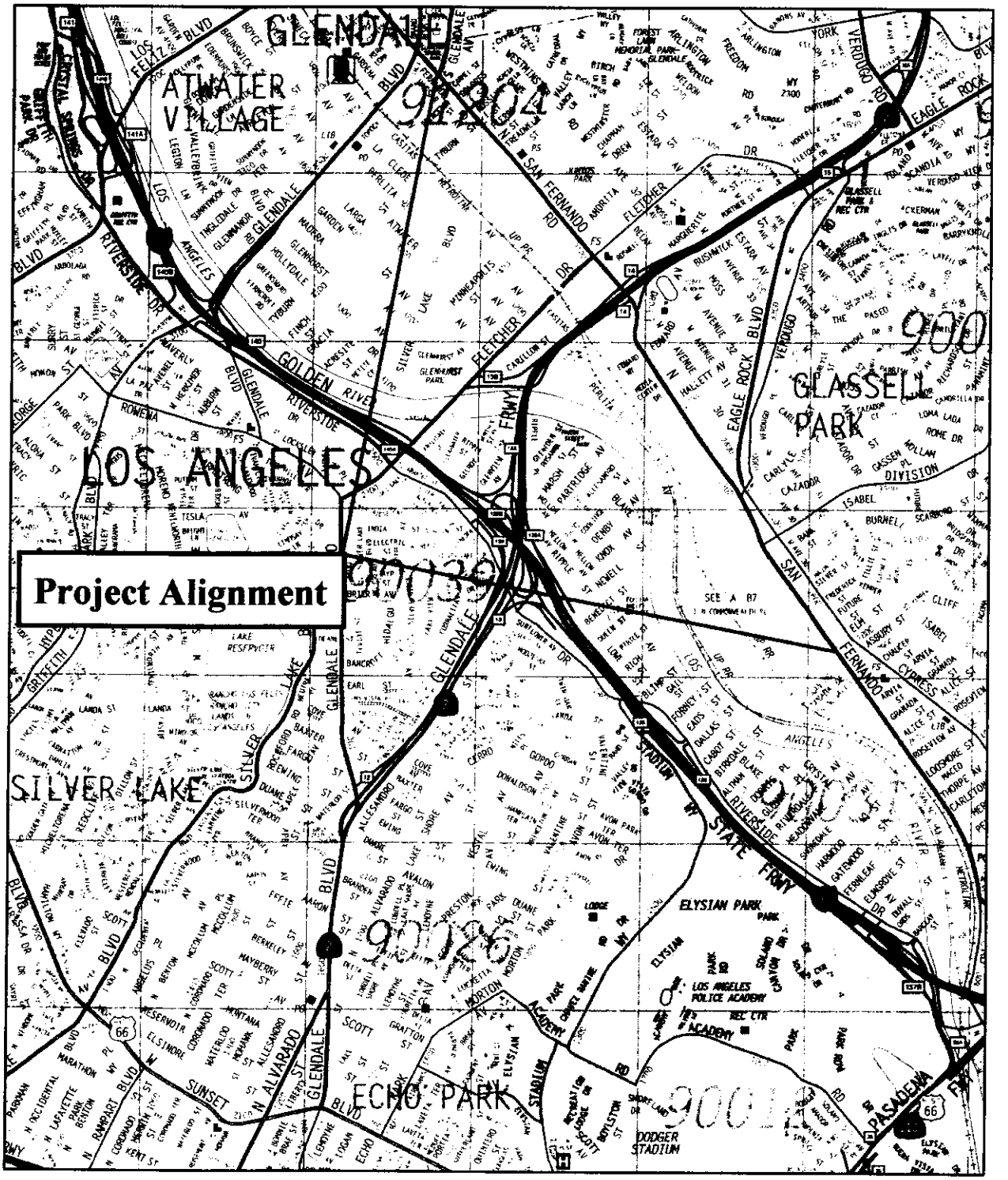

Figure 2. Proposed Taylor Yard Park Pipeline Alignment Illustrated on the Current Thomas Bros. Map.

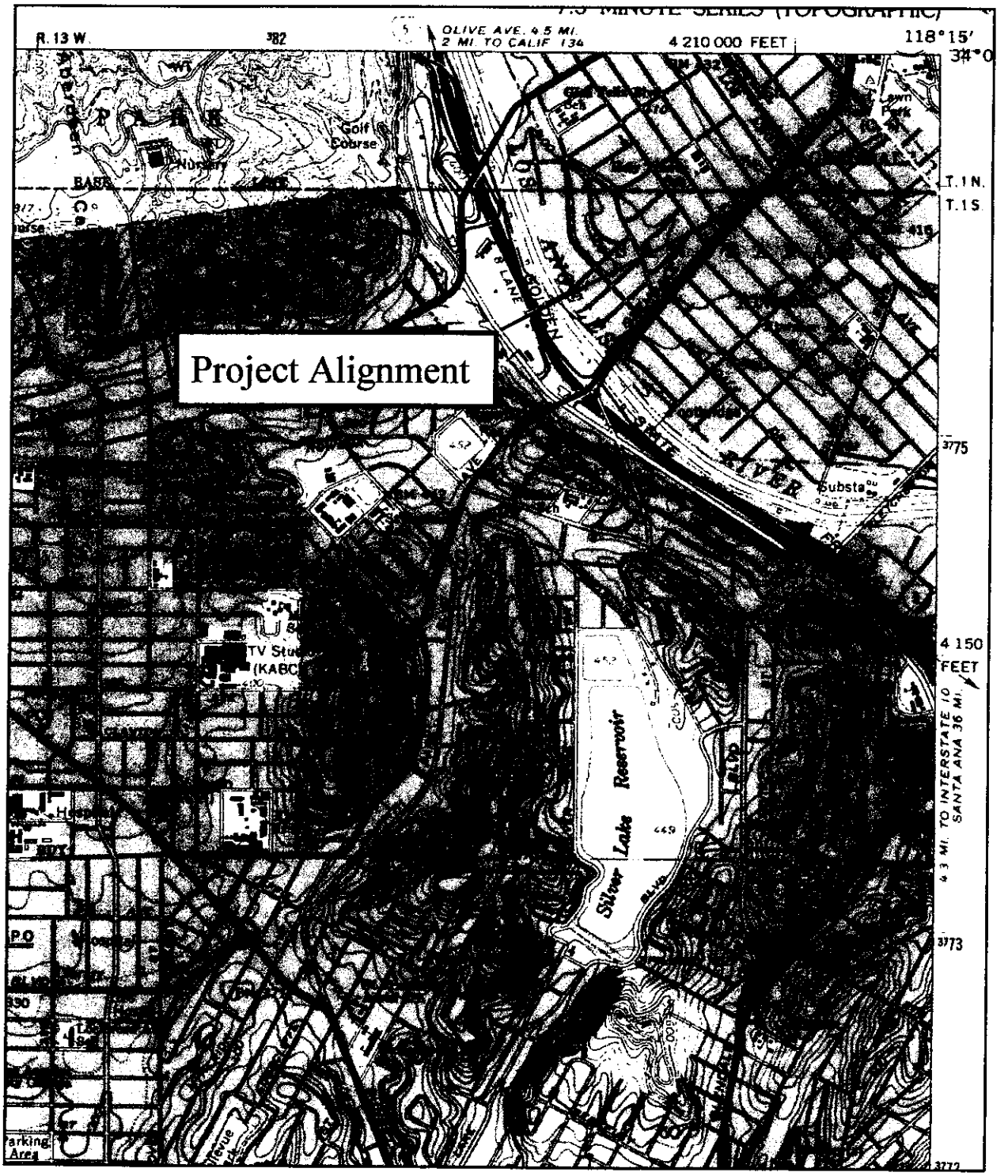

Figure 3. Northern Extent of the Proposed Taylor Yard Park Pipeline Alignment Illustrated on the Current USGS Hollywood Quadrangle (rev. 1994).

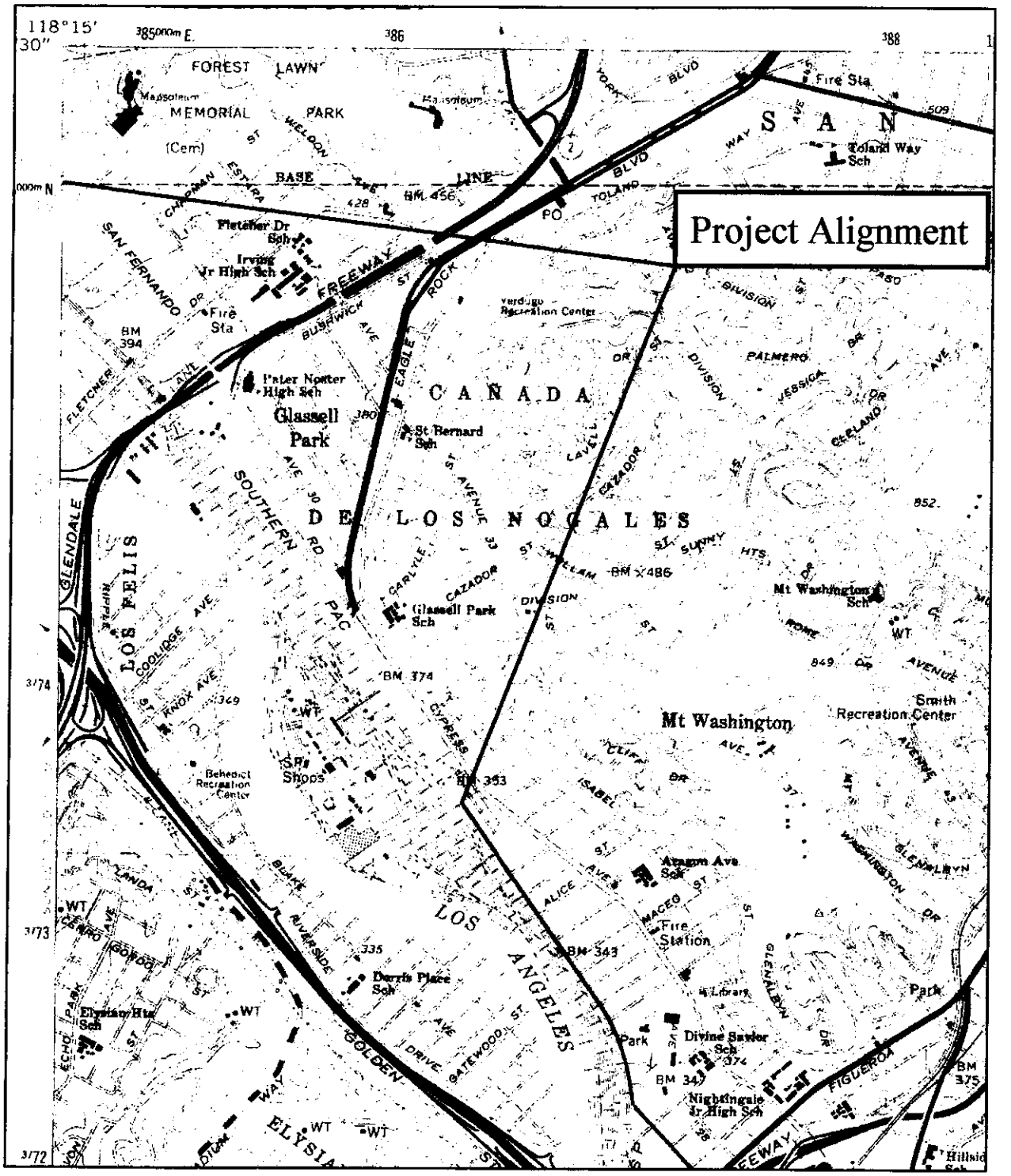

Figure 4. Southern Extent of the Proposed Taylor Yard Park Pipeline Alignment Illustrated on the Current USGS Los Angeles Quadrangle (rev. 1981).

The proposed pipeline will consist of 2.3 miles of 16-inch ductile pipe within the San Fernando Road right-of-way and will be placed using open trench excavation and/or pipe-jacking. Pipeline depth will vary from seven to twelve feet below current grade.

CULTURE HISTORY BACKGROUND
- Location and Setting -

Citing Becker (1999:3-5).

> ... Prior to the development of modern flood control measures, the coastal plains of the Los Angeles area were probably subjected to greater flood hazards than any other area of comparable size in the United States (Van Wormer 1985:5). The steeply rising San Gabriel Mountains capture storm systems moving inland from the Pacific Ocean. Saturated air cools as it rises over the mountain barrier, reducing its capacity to hold moisture, which precipitates as rain and snow. This effect of elevation on precipitation is graphically demonstrated by comparing the 8 inches of average annual rainfall typically recorded along the coast to the 30 inches records on Mount Wilson (Schoenherr 1992:316). Torrents of raging water race down stream mountain canyons into the valley floors during storms. Massive amounts of sediment are transported by the high-velocity flow; boulders the size of automobiles were reportedly carried great distances during the 1934 flood. Floods ravaged the Los Angeles Basin through the eighteenth, nineteenth, and early twentieth centuries, causing a great deal of destruction (Van Wormer 1985).
>
> Recent archaeological investigations along the coast of southern California show that prehistoric settlement patterns in the region were probably heavily influenced by the unpredictable nature of large flood events (Altschul et al. 1992; Grenda et al. 1994). Although the model developed to explain this settlement pattern is based on the effects of floods on the changing course of the Los Angeles River, it clearly demonstrates that human populations were cognizant of flood dangers and positioned their villages to reduce the associated risk ... Plant of the Valley Grassland community would have proliferated in the broad expanse of the San Fernando Valley. The Coastal Sage Scrub community also would have been found within the valley and along the lower hills in the area. Shrubs 1-5 feet tall dominate the coastal sage zone, whereas flowering annuals cover the grasslands. Stems, stalks, and shoots of various shrubs would have been the target of collectors in the coastal sage zone; seeds would have been favored in the grasslands.
>
> Alluvial Scrub, a variation of the Coastal Sage Scrub community, is frequently found on out-washed floodplains. *Yucca whipplie*, a common component of Alluvial Scrub communities ... This plant was very important to the Native Americans of California: the roots were used for manufacturing soap and dye; the leaves were woven into cordage, netting, basketry, and sandals; and the flower stalks, blossoms, and fruit pods were eaten.

> Grasslands and sagebrush would have given way to chaparral in the foothills of the San Gabriel Mountains. This zone of brushy, woody, hard-leaved evergreens dominates the south-facing slopes of the San Gabriel Mountains up to approximately 5,000 feet AMSL [above mean sea level]. The Chaparral community is richer in roots and berries, leaves and greens, and roots and bulbs than either the Grasslands or Sage Scrub communities. Fires are common in the chaparral, and many species have developed fire-resistant seeds that sprout shortly after being burned. Indigenous peoples capitalized on this fact, inducing fires that aided chaparral in out-competing grasslands in some areas.
>
> Plants of the Southern Oak Woodland community are found in well-watered valleys and canyons. Several species of oak tree dominate this community, and the acorns they produce where a staple in the diet of local Native Americans. The Montane Coniferous Forest community grows at elevations above approximately 5,000 AMSL (Munz 1974; Schoenherr 1992). Plants of this community include several species of pine, fir, and oak.

Grenda, in Becker (1999:7-14), presents a summary of the culture history background for this particular area of Southern California:

> Of the many cultural sequences of southern California, three main regional syntheses are commonly used in modern archaeological interpretation. The first, advanced by Wallace in 1955, defines four cultural horizons, each with local variations: Early Man, Millingstone, Intermediate, and Late Prehistoric. Wallace's (1978) revision divides the sequence into three broader periods: Period I, hunting; Period II, food collecting; and Period III, diversified subsistence. Between Wallace's (1955) original synthesis and his revision (1978), Warren (1968) proposed his regional synthesis. Employing a more ecological approach, Warren defined five traditions in southern California. Three of the five traditions are represented in the project region: San Dieguito, Encinitas, and Campbell. In addition to the Colorado River and interior desert regions, San Dieguito was later incorporated into the larger Western Pluvial Lakes tradition that extends from northeastern California to the Mojave Desert and the San Diego coastal area (Bedwell 1970).
>
> The proliferation of cultural sequences through the years reflects general changes and developments in the field of archaeology (Willey and Sabloff 1980). Early sequences (Rogers 1945) focus on subsistence and technology, reflecting the prevailing emphasis on classifying artifacts. As social relationships, ideology, and other aspects of culture began to be investigated in the 1950s, an emphasis on cultural ecology (Meighan 1959 a) appeared in the chronology. Warren's (1968) synthesis reflects this ecological approach in archaeology. A major problem with all of the sequences is that they tend to separate cultures based on very slight differences, such as the La Jolla-Pauma distinction, based primarily on differences in resource use. Similarly, the important cultural tradition from hunting to gathering is based on functional characteristics of material culture. Goldberg and Arnold (1988) argue that the broad sequences developed in other regions and applied to interior sites may obscure

prehistoric patterning. Identifying synchronic cultural differences and diachronic culture change, based on these distinctions, is very tenuous. Slight differences between culture reflect the fact that change in California has been a long, slow process. Problems associated with distinguishing cultures are reflected in the number of cultural sequences advanced for the region. As a result, while archaeologists in other regions of the United States have focused on much broader cultural sequences, California researchers continue to redefine local schemes (cf. Chartkoff and Chartkoff 1984). Although precise dates for transitions are avoided, the cultures discussed are generally considered to follow the sequence outlined below.

Hunting Cultures (Early Period)

Malcolm J. Rogers discovered the San Dieguito type site (CA-SDI-149) in 1928, and started publishing on the topic shortly thereafter (Rogers 1929a, 1929b, 1929c, 1938, 1939, 1945). In 1937, George Carter found cultural deposits in the same area; excavations began in the San Dieguito River channel in 1938 (Warren 1966). Many years later, Warren and True (1961) continued work at CA-SDI-149, further defining the culture. These sites date from ca. 10,000 to 7500 B.P. (Moratto 1984), and reflect an adaptation to the post-Pleistocene environment from which megafauna had largely disappeared and the hotter, drier climate of which had forced groups to settle near reliable water sources. These early groups emphasized hunting, using a flaked stone technology that included large flake and core scrapers, choppers, hammer stones, frills, and gravers (Warren 1967). Although plant-processing artifacts are virtually absent from the collections dating to this time period, there is little doubt that this culture used pant resources when available. Sites of this period have primarily been found on ancient lake terraces ...

... The transition from the Pleistocene to the Holocene (12,000 to 8000 B.P.) was a time of major environmental change. Although varying in magnitude and duration, warming trends in the Holocene led to the evaporation of pluvial lakes, to rising seas, to changes in drainage patterns, and to changes in both the flora and fauna of southern California (Antevs 1953; Axelrod 1981; Carbone 1991; Deevy and Flint 1957; Glassow et al. 1988; Grenda 1997; Koerper, Killingley, and Taylor 1986; Van Devender and Spaulding 1979). The changing environment affected human populations and led to many adaptive responses that appear in the archaeological record as visible cultural differences. Inland San Dieguito sites tend to be located on terraces above ancient lake beds and marches, whereas coastal sites are generally located around estuaries and river channels. These locations appear to reflect an early adaptation to the abundant, easily exploitable resources of these settings (Grenda 1997; Moratto 1984; Warren 1987; Warren and Pavesic 1963; Weide 1968).

Presenting a cultural-ecological view to explain these later changes, Koerper et al. (1991) claimed that the presence of milling equipment and shellfish remains at a number of sites has changed the view of the San Dieguito economy from one of a generalized hunting tradition to one of more diverse subsistence strategies. More recently, Jones (1991) has claimed that the archaeological record shows great variation in the use of marine resources. Marine-

resource use varies with a number of critical variables, including coastal environmental conditions and the efficiency ranking of the locally available coastal resources as compared to terrestrial resources. Essentially, Jones (1991) challenges established beliefs about the subsistence patterns of the first inhabitants of California, claiming that coastal resources were important in some regions. If these views are correct, identifying a distinct transition from San Dieguito to Millingstone cultures would be extremely difficult. In addition, if the transition period is difficult to identify, the proposes subtle differences among phases within these cultures would be nearly impossible to see. Again, the paucity of investigated transitional sites has impaired the archaeologist's view.

The Transition from Hunting to Food Collecting

Although Rogers failed to explain the transition from San Dieguito to La Jolla, he was the first to describe the two cultures (Rogers 1939, 1945). The transition remains a debated topic to this day, and a number of hypotheses have been advanced to explain the time. Warren et al. (1961) and Warren and Pavesic (1963) propose that the La Jolla complex began ca. 7500 B.P., when desert gatherers moved west to avoid unfavorable Altithermal climates. Kowta (1969) outlines a similar hypothesis, claiming that this movement coincided with the diffusion of agave to the coast. Kowta strengthens these claims by suggesting that the scrapers were used primarily to process agave and yucca.

Moriarty (1966, 1967), Kaldenberg (1976), and Koerper et al. (1991) find that a continuity exists between San Dieguito and La Jolla. They claim that the La Jolla complex developed out of the earlier San Dieguito. Bull (1987) and Ezell (1987) argue that the La Jolla and San Dieguito are functional variants of the same culture. Others take the view that they are distinct cultures (Hayden 1987; Moriarty 1987; Smith 1987). Moratto (1984) suggests that a combination of some of these models can be used to explain the situation. "Climatic warming after circa 6000 B.C. may have stimulated movements to the coast of desert peoples who then borrowed littoral adaptations from older groups while sharing with them their milling stone and scraper–plane technologies and seed- and agave-processing skills" (Moratto 1984: 151).

Migration along the coast from northern areas is another hypothesis gaining in popularity (Fladmark 1979). Chartkoff and Chartkoff (1984) claim that, as coastal settlement is pushed further back in time, it becomes more likely that the settlers were not related to the Pleistocene hunters of the interior deserts. Adding to the argument, Meighan (1989) notes similarities between lithic artifacts found in California and lithics from sites in British Columbia and Alaska. Erlandson and Colten (1991), however, point out that the California lithics more closely resemble those found in the interior desert. A major obstacle to solving this controversy is the fact that approximately 17,000 km^2 of coastal land has been inundated since the end of the last glaciation (Carbone 1991), effectively burying most coastal sites. If Meighan's (1989) hypothesis is correct, we would expect to find evidence of a coastal migration route at inundated offshore sites along the coast, and habitation sites with a material

culture reflecting the transition period. Early sites on the Channel Islands may also shed light on this route to the New World.

Food-Collecting Cultures (Middle Period)

After a sketchy transition period, the Millingstone horizon became established. Proponents of existing cultural sequences claim that subsistence patterns show marked changes starting ca. 8500 B.P. These changes are visible in the archaeological record as a reduced number of projectile points, scrapers, and choppers, and an increased number of ground-stone artifacts. Whereas hunting and fishing were not replaced by hard-seed procession, the reliance on animals and fish decreased and the diet became increasingly diversified (Koerper 1981). Diversity of adaptation appears to have been the norm in the Middle period. Within this extremely diverse tradition, however, archaeologists have identified a number of "distinct" complexes, each of which is examined below.

La Jolla

La Jollan peoples exploited the coastal regions of Orange and San Diego Counties. Sites are recognized by the presence of ground-stone artifacts in shell middens, usually on terraces around lagoons or bays (Harding 1951; Moriarty 1969; Quillen et al. 1984; Rogers 1939, 1945; Vanderpot et al. 1993). Rogers (1945) and Harding (1951) divide the La Jolla complex into two phases, La Jolla I and La Jolla II. The latter is distinguished by the presence of cemeteries, trade with the Channel Islands, and an improved lithic technology. Moriarty (1966) divides La Jolla into three phases: La Jolla I (5500-3500 B.C.), characterized by the appearance of milling stones, percussion-flaked scrapers, and flexed burials; La Jolla II (3500-2000 B.C.), identified by the appearance of discoidals, cemeteries, and an increase in projectile pont types; and La Jolla III (2000-1000 B.C.), which exhibits influence from the Yuman culture (Moriarty 1966:21-23).

La Jollan technology indicates a mixture of coastal and desert traits. This is because both scraper-plane and ground-stone artifacts are found. Sites include shell middens, hearths, ground stone, flexed burials, and a very basic lithic assemblage. In addition, the tools indicate a greater reliance on marine resources than had the San Dieguito culture (Kaldenberg and Ezell 1974). As indicated earlier, however, Kowta (1969) suggests that scrapers were likely used to process agave and yucca (cf. Basgall and True 1985; Salls 1983). Vanderpot et al. (1993) found agave and cholla in the botanical samples from CA-SDI-6010. Others suggest that scrapers were used as wood-working tools (Eberhart and Wasson 1975), hammers (Johnson 1966), resharpening tools (Treganza and Bierman 1958), or flake tools (Jackson 1977). Some of the more interesting artifacts representative of this complex are discoidals and cogged stones. Although many uses have been proposed, the function of these stones is unknown (Dixon 1968, 1975; Eberhart 1961; Moriarty and Broms 1971). In sum [sic], it appears that La Jolla represents a transitional phase from San Dieguito to Late Prehistoric cultures, rather than a culture with distinct special and temporal boundaries.

Pauma

The Pauma complex is similar to La Jolla in many ways. The main difference between the two is that Pauma sites are generally found in inland valleys and sheltered canyons, out of reach of marine resources. True (1958), Warren et al. (1961), and Meighan (1954) describe Pauma sites as those that display a relatively more sedentary lifestyle and a greater reliance on gathering when compared to the San Dieguito culture. Pauma sites also contain many ground-stone artifacts and a great variety of tools, but lack shellfish remains. Artifacts are similar to those of the La Jolla complex, but subsistence practices were apparently more focused on terrestrial resources. True (1980:30) describes what is known about the Pauma complex:

> (1) The Pauma Complex inventory is very similar to that of the adjacent coastal La Jollan ... and some undefined but close relationship is proposed between the two; (2) the Pauma Complex as defined here includes very little actual evidence of San Dieguito elements ...; and (3) there may be evidence in the area (sometimes associated with Pauma Complex sites) of the Campbell intrusion proposed by Warren.

Even with these recent clarifications by True (1980), many inland, nonceramic sites continue to be automatically classified as Pauma (Carrico 1987). The difference between La Jolla and Pauma is clearly based on functional differences in the artifact assemblages. Greater tool variety indicates greater reliance on terrestrial resources. This adaptation is most likely the result of terrestrial resource availability in the settlement area rather than cultural differences. Any "close relationship" between the two can be explained by viewing the two cultures as functional variants of the same culture (Vanderpot et al. 1993). Classification of these groups separate cultures is the result of archaeologists attempting to define cultural boundaries in an area where boundaries are unclear.

Oak Grove

Whether Oak Grove is a discreet archaeological complex remains unresolved. Most researchers rely on the original definition of the complex provided by D.B. Rogers in 1929 or simply avoid the classification altogether (Woodman et al. 1991). Descriptions of the artifact assemblage tend to fit the typical definition of Millingstone horizon occupation. "In short, what Oak Grove is to a considerable degree becomes a matter of opinion: by some definitions material if an appropriate age would be considered Oak Grove regardless of its attributes, whereas in other instances, locations within the Santa Barbara-Ventura coastal strip and the presence of milling stones would make a site "Oak Grove" (Basgall and True 1985:3.26-3.27).

Topanga

The Topanga complex is divided into three phases (Phases I-III) based on subtle differences in assemblage content. These divisions, however, are poorly substantiated by radiometric measures (Johnson 1966; Treganza 1950; Treganza and Bierman 1958). The complex is defined by its burial modes, ground stone, and medium to heavy core tools. Cogged stones and discoidals are present at many sites, as is typical in many Millingstone horizon sites. Controversy similar to that surrounding Pauma and Oak Grove sites also plagues the Topanga complex. Few well-dated sites and minimal differences from artifacts from other Millingstone sites call this classification into question.

Sayles

Between the Mojave Desert region (exploited by the Pinto Basin culture) and the coastal area (exploited by Millingstone cultures) is a complex that exhibits an assemblage of artifacts that represents use of resources from both desert and coastal regions. Archaeological investigations beginning in the 1940s in the Cajon Pass area revealed a type site (CA-SBR-421) and a number of other sites characteristic of the Sayles complex (Bowers 1976; Moseley and Smith 1962). Kowta (1969) conducted excavations at CA-SBR-421 in 1965 and 1966. Excavations recovered a Millingstone assemblage that also included percussion-flaked scraper planes, cores, plano-convex scrapers, choppers, and hammer stones. Mixing of materials suggests that this culture represents a period of technological change (Kowta 1969). For Moratto (1984), this culture shows evidence of blending between the Pinto Basin culture and the Millingstone cultures of southern California.

Subsequent investigations demonstrated that subsistence patterns were based on the opportunistic hunting of deer, rabbit, and other small game animals, as well as such botanical resources as juniper berries and hard seeds (Basgall and True 1985). Whereas investigations suggest that resources were available year-round, a limited variety of tools suggests a more seasonal use of sites. From the information known about the Sayles complex, it likely represents the transitional period between early hunting and later gathering groups.

It is clear from the descriptions of the different complexes identified for the Middle period that spatial and temporal divisions within southern California do no more than cloud interpretations of prehistory. For the most part, individual complexes are poorly defined and dates are incomplete. Recent archaeological literature reflects this belief and generally recognized only the broader archaeological pattern characterized by the Millingstone horizon (Grenda, Doolittle, and Sterner 1998).

Intermediate Cultures

After an apparent hiatus (ca. 3000-1400 B.P.) in the cultural sequence of a period of reduced activity in many areas (Meighan 1954; Moratto 1984; True 1958, 1966, 1980), there was an influx of Shoshonean (Takic) groups into the coastal zone (Moratto 1984). It is unclear if the

hiatus reflects a migration out of the coastal areas or simply a period of reduced activity. Recent evidence suggests that this hiatus may simply be the result of the paucity of archaeological investigations in southern California (Grenda, Doolittle, and Altschul 1998). In fact, Altschul et al. (1992) presents evidence of increased activity in the Ballona Lagoon. In some areas of southern California, especially along the coast, distinct lake prehistoric ground can be defined. In other areas, it appears the Millingstone cultures (Intermediate cultures) persisted to the ethnographic period. This is apparently the case in most inland regions. But, as is true for earlier periods, cultural distinction is often based on subtle differences. Late prehistoric cultures in southern California most likely reflect both in situ cultural adaptations of these groups in response to environmental change and outside influence from Shoshonean (Takic) intruders of the desert regions (Moratto 1984). These late prehistoric groups are examined in detail below.

Diversified Subsistence (Late Period): Linking Prehistory to the Ethnographic Record

Whereas differentiating between prehistoric cultures is extremely difficult, doing so between historical-period culture appears, at first glance, to be much simpler. Assigning a contact data for when the Spanish first encountered the Native American population is easy. European exploration of California began in 1542, with the arrival of Juan Rodriquez Cabrillo. The earliest historical account of contact with the Gabrielino was in 1769, when Don Gaspar de Portola's overland expedition stopped at a Native American village on the Los Angeles River. Identifying internal cultural change after contact, however, is more dif-ficult. Some of the early encounters led to acculturative processes, whereas others had little impact on the indigenous population.

Originally defined by Meighan's (1954) survey data, the San Luis Rey culture of San Diego County has been equated with the historical-period Luiseno (True 1966). Although the original definition was based on surface surveys, True et al. (1974) divide the culture into two phases, San Luis Rey I (A.D. 1400-1750) and San Luis Rey II (1750-1850), based on the absence or presence of ceramics, cremations and pictographs. The Irvine culture of Orange County is distinguished from the San Luis Rey culture on the basis of subsistence patterns and dates from A.D. 600 to 1800 (Ross 1969, 1970).

It is inferred, based on data gathered during surveys and excavations in San Diego County, that subsistence patterns involved hunting small game and the gathering of seeds and nuts, especially acorns (Meighan 1954). Small settlements located throughout the river basin and on the higher mountain slopes were occupied on a seasonal basis depending on resource availability. It is relatively certain, based on archaeological and ethnographic evidence, that the San Luis Rey culture depended on a variety of resources, ranging from sea mammals to acorns. As contact between aboriginal cultures, missionaries, and other settlers increased, subsistence patterns began to incorporate introduced plants and animals and focus less on coastal resources (Bean and Shipek 1978; Kroeber 1976; Moratto 1984; Strong 1929).

Gabrielino

Ethnographic and ethnohistoric sources agree that the project area falls within the boundaries of Gabrielino territory (Bean and Smith 1978; Johnston 1962; Kroeber 1976; McCawley 1996). This territory stretches from San Bernardino to the coast, from Aliso Creek north to the San Fernando Valley, and includes Santa Catalina, San Nicolas, and San Clemente Islands. The people who lived in the San Fernando Valley are more correctly known as Fernandeño, and spoke a slightly different dialect than the Gabrielino (Kroeber 1976:620). The Fernandeño and Gabrielino are so closely related, however, that distinguishing between them is unnecessary (Bean and Smith 1978; Johnston 1962; Kroeber 1976; McCawley 1996). "Gabrielino," as used throughout this report, includes the Fernandeño. According to Bean and Smith (1978), surrounding cultures included the Chumash to the west, the Tataviam to the north, the Serrano to the north and northeast, the Cahuilla to the east, and the Luiseno to the southeast.

Similar to many ethnographically recorded villages in southern California, Gabrielino villages (rancherias) had their own territories and were often located in defendable canyons or coves along slopes near good water supplies (Beals and Hester 1974; Bean and Shipek 1978). Most groups practiced some form of seasonal movement. Some inland groups would move to the coast in the winter after their acorn stores had been depleted, whereas others moved to the coast during the summer months. Coastal groups were relatively sedentary, although seasonal movement by subunits of a village was common. Population estimates for the Gabrielino are nearly impossible to make, although populations for villages are secure, ranging between 50 and 200. At the time of contact with Europeans, more than 100 Gabrielino villages may have existed.

More is known about the neighboring Luiseño population. Kroeber (1976) estimates the Luiseño population at contact to have been 4,000 and the 1925 population to have been less than 500. In contrast to Kroeber's (1976) estimation, White (1963) places the population at approximately 10,000 (based on 50 villages with an average of 200 people in each). Finally, Cook (1976) claims that the aboriginal population of California stood at 310,000. Based on her estimate of three people per habitable square mile, the Luiseño population would have stood at about 4,500. The true population of the early cultures will never be known, but it is probably safe to place it somewhere between 4,000 and 10,000. However large the ancient population was, it rapidly decreased after contact because of the spread of disease and a sharp decline in living conditions (Bean and Shipek 1978).

At the time of contact, Gabrielino subsistence was based on foraging. Agriculture was not practiced, although the Gabrielino probably burned native vegetation to enhance the growth of wild plant foods (Bolton 1971; Davis 1990). Along the coast, shellfish and other marine resources constituted a large part of the diet. At inland locations, acorns and other seeds were a very important part of the diet. The hunting technology involved in the procurement of food included the bow and arrow, throwing club, snares, deadfall traps, harpoons, fishing line and fishhooks, nets, fire and animal decoys. Gathering technology included digging

sticks, burden baskets, beaters, and tongs for gathering cactus fruit (de Barros and Koerper 1990). Manos and metates were used in the preparation of food, as were the mortar and pestle and leaching baskets (Heizer 1968:11).

A significant amount of economic activity took place in the Gabrielino culture area. Soapstone, fish shell beads (used as money), and otter pelts were traded from the islands to coastal groups, which [sic] probably then exchanged with inland groups for such items as seeds and deer skins (Heizer 1968). Other important goods that moved from the inland areas toward the coast included obsidian (Ericson 1978, 1981; Hughes and True 1985; Koerper, Ericson, Drover, and Langenwalter 1986; Laylander 1991), chert and jasper, and ceramics. Most of this trade probably followed a down the line pattern of exchange, although the distances involved do not preclude expeditions to the sources. Economic relations were strong with the Serrano (Kroeber 1976) and probably with the Cahuilla (Bean 1972). Exchanges also likely took place with the Juaneno, Luiseño, and Chumash (Du Bois 1908; Hudson 1969). Long distance trade is indicated by the presence of southwestern pottery at several sites in southern California (DuBois 1908; Hudson 1969).

McKenna (1996) also notes that the study area is located in an ethnographic area associated with the Gabrieliño (*Tongva*)/Fernandeno of the Los Angeles, San Gabriel, Rio Hondo, and Santa Ana River drainage (roughly Los Angeles County of today; McCawley 1996:23; Kroeber 1925:621; and Bean and Smith 1978:538). The Gabrieliño/Fernandeno are known as a society identified by Late Prehistoric/Proto-historic ethnographic records and archaeological data identifying Late Prehistoric occupation of Southern California. Changes identified between the earlier periods and the Late Prehistoric are evident in the archaeological record and in variations seen in technologies, social/community patterns and, in some cases, population estimates. Populations preceding the Gabrieliño, and likely directly related to the Gabrieliño, can be archaeologically identified as separate or variant forms of the evolving culture.

Early studies (see Smith and Teggart 1909; Benedict 1924; Bolton 1927; Robinson 1939; and Kroeber 1925) emphasized anthropological/ethnographic studies while more recent investigations have relied on archaeological data (e.g. Drover 1980; Koerper, Drover, and Langenwalter 1983; McKenna 1985 and 1986; Hudson 1969 and 1971; Rice and Cottrell 1976; Wallace 1955; Warren 1968; Greenwood 1978; and Mason et al. 1994). The majority of data currently available to archaeologists can be referenced in publications of the Society for California Archaeology (1990 to date).

The term "Gabrieliño" is a reference to the direct association between the Native American population of the San Gabriel Valley and the Mission San Gabriel de Archangel. The Mission was originally located in the Whittier Narrows area but relocated shortly after its founding because of unstable ground along the Rio Hondo/San Gabriel River channels. The Fernandeno are spatially associated with the Mission San Fernando and are "cousins" of the Gabrielino. The ethnographic boundaries for the Gabrieliño/Fernandeno are presented by Bean and Smith (1978:538) and refined by McCawley (1996).

The Late Prehistoric Gabrieliño/Fernandeno utilized numerous plants and animals for food, shelter, and medicines. Citing Kroeber (1976: 649-650), they used seeds most often, followed by foliage, shoots, fruits, and berries. Mountain shrubs, ash, elder, and willow were used for shelters and tool materials (e.g. bows). Over twenty plants were used regularly for medicinal purposes. Fauna used as food sources included deer, rabbits, wood rats, squirrels, quail, and ducks. Animals specifically not used were dog, coyote, bear, tree squirrel, pigeon, dove, mud hen, eagle, buzzard, raven, lizards, frogs, and turtles (Kroeber 1976:652). Along the coast, wetlands and ocean resources were exploited.

The Gabrieliño/Fernandeno used numerous styles of bows, bedrock mortars, portable mortars, pipes, chisels, metates, manos, and various forms of chipped stone tools. Prior to the establishment of the Mission system, populations tended to live in larger villages with a series of "daughter" or "satellite" sites (limited activity areas) with lesser populations.

Seasonal migration was practiced for the exploitation of resources and protection from seasonal weather conditions (Scientific Resource Surveys 1979:7). Habitation structures were constructed of branches, grasses, and mud and interior hearths were used for heat. Cooking was generally conducted outdoors with hearths generally used for food preparation.

Archaeological data and correlations with ethnographic data have resulted in the determination of a generalized chronology for prehistoric Southern California. The project area is located within the inland areas of Gabrieliño/Fernandeno territory while chronological data has emphasized coastal occupations. Nonetheless, current archaeological data has indicated that the coastal chronological data derived by Wallace (1955), Warren (1968), and later by Koerper and Drover (1983) can be applied to this region (Mason 1984; McKenna 1986). The coastal chronology generally accepted for Southern California has been as follows:

Early Man Horizon: Pre-dating 6,000 B.C.; is characterized by the presence of large projectile points and scrapers, suggesting a reliance on hunting rather than gathering;

Milling Stone Horizon: 6,000 to 1,000 B.C.; characterized by the presence of hand stones, milling stones, choppers, and scraper planes; tools associated with seed gathering and shell fish processing with limited hunting activities; evidence of a major shift in the exploitation of natural resources;

Intermediate Horizon: 1,000 B.C to A.D. 750; reflects the transitional period between the Milling Stone and the Late Prehistoric Horizons; little is known of this time period, but evidence suggests interactions with outside groups and a shift in material culture reflecting this contact;

Late Prehistoric Horizon: A.D. 750 to European Contact; characterized by the presence of small projectile points; use of the bow and arrow; steatite containers and trade items, asphaltum; cremations; grave goods; mortars and pestles; and bedrock mortars.

Recent investigation of sites in the Newport Bay/Irvine area of Orange County (Mason and Peterson 1994) have yielded significant data resulting in refinements of the coastal chronological sequences. Mason and Peterson's conclusions were based on the radiocarbon dates from 326 samples representing thirty-one archaeological sites or cultural contexts. Summarizing their results, Mason and Peterson (1994:55) found that the majority of sites were occupied during the Milling Stone Horizon or the Late Prehistoric Horizon "... without much overlap ...". Only four sites yielded results suggesting occupation during more than one cultural period (e.g CA-ORA-64). In a few instances, dates suggested occupation during the Intermediate Horizon.

Mixtures of dates appeared in limited areas and could be directly associated with areas of agricultural activities. The frequency distribution of radiocarbon dates from the Mason and Peterson investigations were grouped in blocks of fifty year intervals and yielded a range of dates from 200 B.P. (before present) to 9280 B.P. (dates from CA-ORA-246 indicate occupation of the Newport Bay area as early as the Paleo-Coastal period or (Early Man Horizon). Mason and Peterson's conclusions (1994:57) do not necessarily change the basic chronology, but distinguish more individualistic periods of occupation that are not necessarily evident in the analysis of an artifact assemblage. Mason and Peterson's refined chronology is presented in Table 1.

The Mason and Peterson discussions emphasize that the early definitions of "horizons" were based on artifact assemblages and these correlations have not been altered by the redefined chronology. Through the application of radiocarbon dating and comparative site analyses, studies have resulted in identifying relatively discrete subdivisions within the Millingstone and Late Prehistoric sites. Variations appear within these two horizons/ periods which can be explained by temporally discrete occupations. Future studies of sites yielding statistically valid artifact assemblages and radiocarbon samples can be conducted to further the understanding of Native American activities throughout Southern California. These studies can also assist in understanding the relative lack of data for the Intermediate Horizon/Period.

With respect to the historic period, Becker (1999) states:

> A number of factor led to the deterioration of the Native American lifeways. Missionization, the Gold Rush, and the granting of statehood to California brought many Europeans and Anglo-Americans to the area (Bancroft 1886; Kroeber 1976). In the eighteenth century, the Spanish established a series of missions in Alta California. Mission San Gabriel was founded in 1771, and by 1778, mass conversions of Native American villages began. Many Native Americans were brought to the mission, where they were taught the Catholic faith, the Spanish language, and crafts (Bean and Shipek 1978). The change in lifeways was forced on the Gabrielino, and led to destruction of Native American lifeways and massive popula-tion reduction because of disease in the densely settled missions.
>
> The success of the missions began to decline in 1833, when a Native American emancipation decree was passed. The missions were confiscated by the Mexican government in 1835. At that time, land was granted to citizens for use as grazing land (Elliot 1967; Moyer 1969).

Additional stress came with the secularization of the missions and the lands being split up. Local Native Americans were forced to either work on ranches or become rebels (Moratto and Greenwood 1991: Moratto et al. 1994).

Table 1. Refined Coastal Chronology as Defined by Mason and Peterson (1994).

Cultural Horizons	Defined 1986	Cultural Periods	Redefined 1994	Temporal Correlations
Paleo-Coastal	Pre-6000 B.C.	Paleo-Coastal	Pre-8000 B.P.	Pre-6000 B.C.
Milling Stone	6000 to 1000 B.C.	Milling Stone 1	8000 to 5800 B.P.	6000 to 3800 B.C.
		Milling Stone 2	5800 to 4650 B.P.	3800 to 2650 B.C.
		Milling Stone 3	4650 to 3000 B.P.	2650 to 1000 B.C.
Intermediate	1000 B.C. to A.D. 750	Intermediate	3000 to 1350 B.P.	1000 B.C. to A.D. 650
Late Prehistoric	A.D. 750 to European Contact	Late Prehistoric 1	1350 to 650 B.P.	A.D. 650 to 1350
		Late Prehistoric 2	650 to 200 B.P.	A.D. 1350 to Contact

The City of Los Angeles, its river (located southwest of the project alignment), and surrounding communities are described in Gudde (1969:183) as follows:

Los Angeles, los an'-je-les, los ang-gles: **River**, city, **County**. According to Kroeber (AAE, VIII. 39), the place where Los Angeles now stands was known to the Indians as *Wenot* "because of a large river there." The word for stream is *Wanic* in Cahuilla and *Wanut* in Serrano dialect. Hugo Reid (Dakin, Paisano, p. 220) says that the name of the rancheria on the site of the city was *Yang-na*. The mission padres, however, called it *Yabit* (CHSQ, XIII, 195). The Portola expedition camped on the bank of the river on August 2, 1769, and named it in honor of *Nuestra Senora de los Angeles de Porciuncula*, whose feast day they celebrated the preceeding day. The Portiuncula chapel, the cradle of the Franciscan order, is in the basilica of 'Our Lady of the Angels' near Assisi, Italy. Crespi and Costanso simply called the stream *Portiuncula*. This abbreviated form was commonly used; Palou, however, in December, 1773, gives the full name: *Nuestra Senora de los Angeles de Portiuncula* (Hist. Mem., III, 220). The name was not preserved through the river, but through the name of the *pueblo*, the projected establishment of which is mentioned on December 27, 1779 (PSP, I, 59): *la ereccion de un pueblo con el titulo de Reina de los Angeles sobre el rio de la Porciuncula*, 'the founding of a town with the name Queen of the Angels on the river of the Porciuncula.' On August 26, 1781, Governor Neve issued the final instruction for the founding of the town, which took place on September 4, 1781. Although the place was not named for the Angels, bit for the Virgin, the most common designation of the future

> metropolis seems to have been *Pueblo de Los Angeles*. After the American occupation there was some confusion about the proper use of the name. Stockton date-lined his general order of January 11, 1847, after the occupation of the place by the U.S. forces, *Ciudad de los Angelos*, and Emory gives the English equivalent of this version, City of the Angels (*Mil. Rec.*, p. 121). Ord shows the City of Los Angels in his sketch of August, 1849, and the present abbreviated version was definitely established when the county was organized, February 18, 1850, and the city incorporated, April 4, 1850.

Although the majority of the current project alignment is within the City of Los Angeles, this area was annexed into the city relatively late and is not within the early city boundaries. The area is historically referred to as Glassell Park. Briefly, Glassell Park was originally a small community incorporated into the City of los Angeles. Citing Wikipedia (http://en.wikipedia.org/wiki/Glassell_Park):

> Glassell Park is one of Los Angeles's older neighborhoods, having been developed in the late 19th century along the Pacific Electric Railway track that formerly ran in the median of Eagle Rock Boulevard and the adjoining hills. It is a quiet, almost sleepy, largely residential district, with a large industrial corridor along San Fernando Road (which parallels Union Pacific Railroad tracks) and low-rise commercial buildings along Eagle Rock Boulevard.

San Fernando Road is described (www.answers.com) as:

> ... a major street in the city and county of Las Angeles ... San Fernando Road passes through the Sylmar district of Los Angeles and the City of San Fernando ... It enters the City of Glendale ... closely follows that Los Angeles River through the Atwater Village and Glassell Park neighborhoods. San Fernando Road ends at Figueroa Street, where it becomes Avenue 20, and it finally ends at Main Street, northeast of Downtown Los Angeles.
>
> Prior to the construction of Interstate 5, San Fernando Road was old U.S. Highway 99 and U.S. Highway 6 ... it was re-signed as Business Interstate 5 ... Today, San Fernando Road is used as an alterantive to the congested 5 Freeway between Lincoln Heights and the Newhall Pass ...

With respect to this general area, prior to the urban development, the natural setting was characterized as a California Coastal Sage Scrub and Chaparral community providing abundant natural resources for the prehistoric Native American populations (Perry 1987:12; McCawley 1996:34-39). The setting of the historic period in California began in 1769 with the initiation of the Spanish Mission Period. In this area, two ranchos have been identified: the Rancho Canada de los Nogales, a small (1200 acres; granted in 1844) rancho associated with Glassell Park; and Rancho San Rafael, a large (36,403 acres granted to Don Jose Maria Verdugo in ca. 1798) associated with Atwater Village and

points north and west. The San Fernando Valley (to the north and northwest) is associated with the Mission San Fernando (established in 1797). San Fernando Road was developed at the time the Southern Pacific Railroad established its line from Los Angeles to present-day San Fernando (ca. 1873). As such, the San Fernando Road alignment, the Southern (Union) Pacific Railroad right-of-way, and the reported alignment for the Pacific Electric Railway are all historic alignments associated with the late 19th and early 20th century developments in the area.

METHODOLOGY

The Los Angeles Department of Water and Power Taylor Yard Park Water Recycling Project requires compliance with the California Environmental Quality Act (CEQA,), as amended. To facilitate the research requirements, McKenna et al. conducted the following scope of work:

1. Archaeological Records Check: McKenna et al. completed a standard archaeological records check through the California State University, Fullerton, South Central Coastal Information Center (Appendix B). This research was designed to provide baseline information on studies completed within the area, site forms for recorded resources, and data pertaining to significant or listed properties in the area. The research was completed by Kristina Lindgren, Archaeological Associate at McKenna et al. This research was conducted to address the current alignment (September 19, 2006) and included a search for a one-half mile on either side of San Fernando Road. Site records, cultural resource management reports, and documentation for listed properties and/or historic maps were researched.

2. Native American Consultation: McKenna et al. conducted the Native American Consultation through initial consultation with the Native American Heritage Commission and subsequently through letters to all identified contacts within Los Angeles County. The McKenna et al. consultation also included a personal phone call to Anthony Morales (September 27, 2006), current Chair of the Gabrielino/Tongva of Los Angeles County. Mr. Morales voiced his concern for cultural resources and requested that he be kept informed as to the results of the testing program. If resources were identified, he would like to visit the site and make a decision as to the official policy of the Gabrielino/Tongva with respect to the resources.

   Supplemental Research: In addition to the standard archaeological records check, McKenna et al. completed research through the Bureau of Land Management General Land Office files, the University of California Historic Map Library, and the local libraries and historical societies. McKenna et al. also researched the historic Sanborn Maps at the Los Angeles Public Library, although the maps did not cover this particular area of Los Angeles County. All pertinent data was incorporated into this report.

3. Paleontological Overview: McKenna et al. completed a paleontological overview through the Natural History Museum of Los Angeles County (on file, McKenna et al.). Results of this study are presented later in this report.

4. Field Survey: The McKenna et al. survey crew completed a windshield survey of the pipeline alignment between Glendale Avenue and Elm Street (on San Fernando Road) and within the cities of Glendale and Los Angeles. The field survey was completed by Michael A. McKenna, Associate Archaeologist and Historian for McKenna et al. The survey was completed on September 17, 2006.

5. Analysis of the Data Compiled: Upon completion of the field studies, background research, and review of the project alignment, McKenna et al. assessed the potential impacts the project may have on cultural resources.

6. Report Preparation: This technical report was prepared in a format and with data contents required for compliance with the California Environmental Quality Act, as amended. McKenna et al. used earlier reports as a standard for the format and adapted the format slightly to address the specific issues at hand. All pertinent data has been included for review and comment.

PREVIOUS ARCHAEOLOGICAL RESEARCH

The proposed alignment is illustrated on two USGS Quadrangles: Hollywood and Los Angeles (see Figures 3 and 4). As illustrated, the northwestern extent of the alignment crosses the northeastern corner of the Hollywood Quadrangle (rev. 1994) and the remainder of the alignment is illustrated in the northwestern corner of the Los Angeles Quadrangle (rev. 1981).

Hollywood Quadrangle:

Research conducted with respect the alignment on the Hollywood Quadrangle resulted in the identification of a single survey (LA-2950). This study addressed the Pacific Pipeline Route (Peak & Associates 1992), a long pipeline designed to transport liquid petroleum to the Port of Los Angeles (Carson). No cultural resources were reported for that portion of the alignment on the Hollywood Quadrangle, which consisted of approximately .5 miles of alignment between the Los Angeles Corporate boundary and San Fernando Road.

Los Angeles Quadrangle:

Research conducted with respect to the alignment on the Los Angeles Quadrangle resulted in the identification of numerous studies, including those of Wlodarski (1991; LA-2517); Peak & Associates (1992; LA-2950, see above); Wlodarski (1996; LA-3647); Wlodarski (1996; LA-4046); Smith (2000; LA-5414); Romani (2000; LA-5449); and Greenwood, Savastio, and Messick (2003; 6837).

Of particular interest are the studies of Romani (2000), who specifically addressed the "Lenner Taylor Yard"; Wlodarski (1991 and 1992) , who addressed the L.A. Police Academy and Driver Training Facility; and Smith (2000), who addressed improvement along the Glendale Freeway. Despite the extent of these studies, no cultural resources were reported.

Supplemental research resulted in the identification of the Van de Kamp's Bakery at 3020 San Fernando Road, a City of Los Angeles Historic-Cultural Monument No. 569. The City's Cultural Affairs Department, Cultural heritage Commission describes the property as:

> ... designed by Architect J. Edwin Hopkins and constructed in 1930. This structure is the only example of a Dutch Renaissance Revival industrial plant in Los Angels and was part of the most successful effort in the City's history to establish a corporate image through thematic architecture. Declared: 5/12/92.

The Van de Kamp's Bakery building was the headquarters for the company between 1930 and 1990, when the company went out of business. The Van de Kamp family sold their interest in the company in ca. 1970. Although listed as a local monument in 1992, the property fell into a state of disrepair and was vandalized. Proposals to demolish the building were circulated, but the main structure has been saved and will be used as the anchor for the redevelopment of the property as an extension of the Los Angeles Community College facilities (DMJMHN 2005). The proposed project will not impact this property.

The structures at 2911 San Fernando Road (at the Glandale Freeway crossing), was originally developed as the pre-WWII Theme Hosiery Company, but more recently known as the Ribet Academy and/or Pater Noster High School. Data acquired through the Los Angeles Assessor's Office note initial development as early as 1923 and subsequent improvements in 1926, 1945, 1947, 1972, 1985, and 1999. This property was evaluated for the National Register of Historic Places (1994) and found to be ineligible for listing. Nonetheless, the proposed project will not impact this property and there will be no adverse environmental impacts with regard to historic resources.

The property at 2121 N. San Fernando Road was also evaluated for the National Register of Historic Places and deemed not eligible (specific data not on file for review). Research conducted by McKenna et al. resulted in the identification of this structure as the "... former Capitol Records record pressing plant ..." (www.anotheryearinla.com). This property, located on the north side of San Fernando Road and between Cazador Street and Division Street, is identified by the County Assessor as a 1923-1935 structure covering 14,071 square feet. Visual examination showed the building to exhibit elements of Art Deco design with decorative motifs and some significant alterations. The main windows have been covered and the building dominates the property. Additional structures associated with Capitol Records were likely present, although not specifically identified. The evaluation of this structure should be revisited and the proposed project should insure no adverse secondary impacts through avoidance.

In reviewing Assessor data for the proposed alignment, McKenna et al. found that numerous structures along the right-of-way date to the 1920s and dates of construction range from the 1920s through modern day. Listed in Table 2, the properties are identified by address and dates of construction or alteration. In some cases, the Assessor data is out-of-date and McKenna et al. makes note of the inconsistencies.

Table 2. Summary of Structure Data along the Proposed Taylor Yard Park Project Right-of-Way.

(Northeast Side of San Fernando Road - North to South)

APN	Address	Use	Date(s)	Comments*
5640-036-017	1811 Glendale Ave.	Commercial	1965	Modern
5640-036-019	3680 N. San Fernando Rd.	Commercial	1959	Modern
5459-002-018	3650 N. San Fernando Rd.	Commercial	1981	Modern
5459-002-017	3640 N. San Fernando Rd.	Commercial	1915-36	Historic
5469-002-010	3634 N. San Fernando Rd.	Commercial	1933-34	Historic
5459-003-023	3630 N. San Fernando Rd.	Commercial	1967	Modern
5459-003-020	3618 N. San Fernando Rd.	Commercial	1959	Modern
5459-003-002	3614 N. San Fernando Rd.	Commercial	1930	Historic
5459-003-001	3608 N. San Fernando Rd.	Commercial	1927-33	Historic
5458-005-037	3631 N. San Fernando Rd.	Commercial	1987	Modern
5458-004-019	3604 N. San Fernando Rd.	Commercial	1952	Historic
5458-004010	3604 N. San Fernando Rd.	Commercial	1952	Historic
5458-004-023	Vacant	Vacant	n.d.	Modern
5458-004-024	Vacant	Vacant	n.d.	Modern
5458-004025	3501 N. San Fernando Rd.	Commercial	1992	Modern
5458-006-900	3353 N. San Fernando Rd.	Municipal	1968-75	Police Facility
5458-006-903	3353 N. San Fernando Rd.	Municipal	1968-75	Police Facility
5458-006-002	3347 N. San Fernando Rd.	Commercial	1979	Modern
5458-007-012	3333 N. San Fernando Rd.	Commercial	1953-62	Modern

Table 2. Summary of Structure Data along the Proposed Taylor Yard Park Project Right-of-Way (cont'd.).

(Northeast Side of San Fernando Road - North to South)				
APN	Address	Use	Date(s)	Comments*
5458-007-015	3141 N. San Fernando Rd.	Commercial	1979-81	Modern
5458-007-016	3225 N. San Fernando Rd.	Commercial	1997	Modern
5458-007-017	3221 N. San Fernando Rd.	Commercial	1956-85	Modern
5458-007-009	3141 N. San Fernando Rd.	Commercial	1955-03	Modern
5458-009-018	3075 N. San Fernando Rd.	Commercial	1931-35	Historic
5458-008-014	3117 N. San Fernando Rd.	Commercial	1986	Modern
5457-006-036	2829 N. San Fernando Rd.	Commercial	1974	Modern
5457-006-035	2821 N. San Fernando Rd.	Commercial	1939	Historic
5457-005-013	2843 N. San Fernando Rd.	Commercial	1962	Modern
5457-005-015	2911 N. San Fernando Rd.	School Site	1923-99	Pater Noster H.S.
5458-010-012	3017 N. San Fernando Rd.	Commercial	1985	Modern
5457-007-013	2743 N. San Fernando Rd.	Commercial	1956-58	Modern
5457-007-012	2737 N. San Fernando Rd.	Commercial	1962	Modern
5457-007-011	2733 N. San Fernando Rd.	Commercial	1953	Historic
5457-007-031	2727 N. San Fernando Rd.	Commercial	1961	Modern
5457-007-008	2717 N. San Fernando Rd.	Commercial	1980	Modern
5457-007-039	2709 N. San Fernando Rd.	Commercial	1946	Historic
5457-007-038	2703 N. San Fernando Rd.	Commercial	1946	Historic
5457-007-037	2701 N. San Fernando Rd.	Commercial	1939-70	Modern
5457-007-036	2623 N. San Fernando Rd.	Commercial	1957	Modern
5457-007-035	2611 N. San Fernando Rd.	Commercial	1967	Modern
5457-007-001	2601 N. San Fernando Rd.	Commercial	1959	Modern
5457-008-023	2545 N. San Fernando Rd.	Commercial	1911-30	Historic

Table 2. Summary of Structure Data along the Proposed Taylor Yard Park Project Right-of-Way (cont'd.).

(Northeast Side of San Fernando Road - North to South)

APN	Address	Use	Date(s)	Comments*
5457-008-029	2537 N. San Fernando Rd.	Commercial	1982	Modern
5457-008-028	2529 N. San Fernando Rd.	Commercial	1967	Modern
5457-008-027	2515 N. San Fernando Rd.	Commercial	1954-60	Modern
5457-008-017	2501 N. San Fernando Rd.	Commercial	1949	Historic
5457-008-018	No Street Address	Commercial	1955	Historic
5457-008-019	2425 N. San Fernando Rd.	Commercial	1953	Historic
5457-009-001	2413 N. San Fernando Rd.	Commercial	1957	Modern
5457-009-002	2409 N. San Fernando Rd.	Commercial	1957-61	Modern
5457-009-003	2353 N. San Fernando Rd.	Commercial	1958	Modern
5457-009-004	2347 N. San Fernando Rd.	Commercial	1988	Modern
5457-009-005	2343 N. San Fernando Rd.	Commercial	1960	Modern
5457-009-006	2339 N. San Fernando Rd.	Commercial	1962	Modern
5457-009-007	2333 N. San Fernando Rd.	Commercial	1996	Modern
5457-009-008	2325 N. San Fernando Rd.	Commercial	2003	Modern
5457-009-009	2319 N. San Fernando Rd.	Commercial	1978	Modern
5442-004-034	2235 N. San Fernando Rd.	Commercial	1985	Modern
5442-004-001	2135 N. San Fernando Rd.	Commercial	1973	Modern
5442-004-005	2121 N. San Fernando Rd.	Commercial	1923-35	Historic
5442-004-004	2113 N. San Fernando Rd.	Commercial	1948	Historic
5442-004-003	2107 N. San Fernando Rd.	Commercial	1949-55	Historic
5442-004-002	2101 N. San Fernando Rd.	Commercial	1960-61	Modern
5442-004-007	2025 N. San Fernando Rd.	Commercial	1931	Historic
5442-004-008	2021 N. San Fernando Rd.	Commercial	1951	Historic

Table 2. Summary of Structure Data along the Proposed Taylor Yard Park Project Right-of-Way (cont'd.).

(Northeast Side of San Fernando Road - North to South)				
APN	Address	Use	Date(s)	Comments*
5442-004-803	2015 N. San Fernando Rd.	Commercial	n.d.	Modern
5442-004-010	2005 N. San Fernando Rd.	Commercial	1945-51	Historic
5442-004-028	1949 N. San Fernando Rd.	Commercial	1915	Historic
5442-004-027	1943 N. San Fernando Rd.	Commercial	1961	Modern
5442-004-025	1937 N. San Fernando Rd.	Commercial	1929	Historic
5442-004-024	1931 N. San Fernando Rd.	Commercial	1923-25	Historic
5442-004-023	N. 1927 San Fernando Rd.	Commercial	1940	Historic
5442-004-036	1919 N. San Fernando Rd.	Commercial	1924-87	Historic
5442-004-021	1915 N. San Fernando Rd.	Commercial	1945	Historic
5442-004-019	1911 N. San Fernando Rd.	Commercial	1963	Modern
5442-004-017	1907 N. San Fernando Rd.	Commercial	1961	Modern
5442-004-015	1901 N. San Fernando Rd.	Commercial	1958	Modern
5442-004-011	1844 N. San Fernando Rd.	Commercial	1957-68	Modern
5442-004-031	1833 N. San Fernando Rd.	Commercial	1957-60	Modern
5442-004-013	1823 N. San Fernando Rd.	Commercial	1973	Modern
5442-004-014	1803 N. San Fernando Rd.	Commercial	1923	Historic
5442-005-012	(Redeveloped)	Commercial	n.d.	Modern
5442-005-010	(Redeveloped)	Commercial	n.d.	Modern
(Southwest Side of San Fernando Road - North to South)				
5640-037-004	3693 N. San Fernando Road	Commercial	1939	Historic
5640-037-034	3685 N. San Fernando Road	Commercial	1972	Modern
5640-037-032	3673 N. San Fernando Road	Commercial	1922-51	Historic
5640-037-014	3661 N. San Fernando Road	Commercial	1949	Historic

Table 2. Summary of Structure Data along the Proposed Taylor Yard Park Project Right-of-Way (cont'd.).

(Southwest Side of San Fernando Road - North to South)

APN	Address	Use	Date(s)	Comments*
5640-037-015	3653 N. San Fernando Road	Commercial	1958	Modern
5640-038-001	3651 N. San Fernando Road	Commercial	1932-44	Historic
5640-038-002	3645 N. San Fernando Road	Commercial	1946-50	Historic
5640-038-003	3643 N. San Fernando Road	Commercial	1952	Historic
5640-038-004	3639 N. San Fernando Road	Commercial	1950	Historic
5640-038-005	3637 N. San Fernando Road	Commercial	1950	Historic
5640-038-030	3631 N. San Fernando Road	Commercial	1964	Modern
5640-038-033	3617 N. San Fernando Road	Commercial	1986	Modern
5640-038-010	3613 N. San Fernando Road	Commercial	1947	Historic
5640-038-031	3601 N. San Fernando Road	Commercial	1973	Modern
5458-003-002	3630 Tyburn Street	Commercial	1953	Historic
5458-003-003	3452 N. San Fernando Road	Commercial	1940-51	Historic
5458-003-004	3444 N. San Fernando Road	Commercial	1952-57	Historic
5458-003-017	3434 N. San Fernando Road	Commercial	1952-75	Historic
5458-003-006	3400 N. San Fernando Road	Commercial	1924-26	Historic
5458-003-027	3440 N. San Fernando Road	Commercial	1966	Modern
5458-003-021	3360 N. San Fernando Road	Commercial	1993	Modern
5458-003-010	3350 N. San Fernando Road	Commercial	1958	Modern
5458-003-011	3340 N. San Fernando Road	Commercial	1990-94	Modern
5458-003-028	3334 N. San Fernando Road	Commercial	1971	Modern
5458-002-016	3326 N. San Fernando Road	Commercial	1950-70	Modern
5458-002-017	3250 N. San Fernando Road	Commercial	1965	Modern
5458-002-005	3200 N. San Fernando Road	Commercial	1972-86	Modern

Table 2. Summary of Structure Data along the Proposed Taylor Yard Park Project Right-of-Way (cont'd.).

(Southwest Side of San Fernando Road - North to South)				
APN	Address	Use	Date(s)	Comments*
5458-002-013	3150 N. San Fernando Road	Commercial	1972	Modern
5458-002-014	2955 Fletcher Drive	Commercial	1990	Modern
5458-002-015	3100 N. San Fernando Road	Commercial	1990-91	Modern
5458-001-006	3052 N. San Fernando Road	Commercial	1967-88	Modern
5458-001-004	3020 N. San Fernando Road	Commercial	1931-67	Van de Kamp's
5457-004-007	2910 N. San Fernando Road	Vacant	1982	Modern
5457-003-018	2840 N. San Fernando Road	Commercial	2001	Modern
5457-003-017	2716 N. San Fernando Road	Commercial	1994	Modern
5457-002-018	No Street Address	Commercial	1960-81	Modern
5457-002-009	2600 N. San Fernando Road	Commercial	1945	Historic
5457-002-008	2566 N. San Fernando Road	Commercial	1938-50	Historic
5457-002-013	2558 N. San Fernando Road	Commercial	1953-65	Modern
5457-002-005	2528 N. San Fernando Road	Commercial	1992	Modern
5457-002-004	2520 N. San Fernando Road	Commercial	1958	Modern
5457-002-003	2500 N. San Fernando Road	Commercial	1953-57	Historic
5457-002-002	2424 N. San Fernando Road	Commercial	1951	Historic
5457-002-001	2400 N. San Fernando Road	Commercial	1946-72	Historic
5457-001-004	Vacant	Vacant	n.d.	Modern
5457-001-025	2346 N. San Fernando Road	Residential	1988	Modern
5457-001-008	2342 N. San Fernando Road	Commercial	1975	Modern
5457-001-028	2316 N. San Fernando Road	Commercial	1934-49	Historic
5457-001-801	2254 N. San Fernando Road	Municipal	n.d.	Modern
5457-001-025	2250 N. San Fernando Road	Commercial	1988	Modern

Table 2. Summary of Structure Data along the Proposed Taylor Yard Park Project Right-of-Way (cont'd.).

(Southwest Side of San Fernando Road - North to South)				
APN	Address	Use	Date(s)	Comments*
5457-001-012	2244 N. San Fernando Road	Commercial	1989	Modern
5457-001-026	2242 N. San Fernando Road	Commercial	1934-75	Modern
5457-001-015	2232 N. San Fernando Road	Vacant	n.d.	Modern
5457-001-017	2216 N. San Fernando Road	Commercial	1960	Modern
5457-001-018	2216 N. San Fernando Road	Commercial	1960	Modern
5457-001-022	2216 N. San Fernando Road	Commercial	1912-15	Historic
5457-001-902	p/o Taylor Yard Park	Municipal	n.d.	Modern
5457-001-901	p/o Taylor Yard Park	Municipal	n.d.	Modern
5442-002-013	p/o Taylor Yard Park	Municipal	n.d.	Modern
5442-002-001	2000 N. San Fernando Road	Municipal	1998	Taylor Yard Park
5442-002-908	p/o Taylor Yard Park	Municipal	n.d.	Modern
5442-002-910	p/o Taylor Yard Park	Municipal	n.d.	Modern
5442-002-911	p/o Taylor Yard Park	Municipal	n.d.	Modern
5442-002-905	p/o Taylor Yard Park	Municipal	n.d.	Modern

As indicated by the data presented in Table 2, historic structures (those pre-dating 1955) tend to cluster on the 3400 and 3600 blocks of N. San Fernando Road; sporadically between the 2400 and 3000 block of N. San Fernando Road; and clustering again between the 1900 and 2100 block of N. San Fernando Road. The two most sensitive areas for structures are at 3020 N. San Fernando Road and Fletcher Drive (at the Van de Kamp's Bakery property) and at 2121 N. San Fernando Road (the original Capitol Records structure).

In addition, it should be noted that San Fernando Road, itself, is an historic roadway, dating to the 1880s and likely earlier (as a wagon road or foot path between Los Angeles and San Fernando). A review of historic maps confirmed the presence of San Fernando Road in 1896 and 1900. These two maps also illustrated the presence of structures along San Fernando Road, suggesting a potential for historic archaeological resources.

The Paleontological overview for this general area (on file, McKenna et al.) notes that this area of Los Angeles County is mapped as consisting of "... Quaternary gravels and sands from the Los Angeles River floodplain." Further, these deposits were noted as non-fossil bearing deposits and the potential for fossil specimens was considered relatively low. Excavations that extend through the recent alluvial deposits may impact fossil bearing substrates (older Quaternary). However, the shallow nature of the proposed excavations (under 12 feet from present grade) indicate paleontological resources will not be impacted by the project.

CRITERIA FOR SIGNIFICANCE

15064.5. Determining the Significance of Impacts to Archeological and Historical Resources.

1. For purposes of this section, the term "historical resources" shall include the following:

   A. A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Pub. Res. Code §5024.1, Title 14 CCR, Section 4850 et seq.).

   B. A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements of section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must
   treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

   C. Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code§5024.1, Title 14 CCR, Section 4852) including the following:

      1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

      2. Is associated with the lives of persons important in our past;

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

4. Has yielded, or may be likely to yield, information important in prehistory or history.

D. The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code sections 5020.1(j) or 5024.1.

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

A. Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.

B. The significance of an historical resource is materially impaired when a project:

1. Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or

2. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

3. Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

C. Generally, a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or the Secretary of the Interior Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995), Weeks and Grimmer, shall be considered as mitigated to a level of less than a significant impact on the historical resource.

D. A lead agency shall identify potentially feasible measures to mitigate significant adverse changes in the significance of an historical resource. The lead agency shall ensure that any adopted measures to mitigate or avoid significant adverse changes are fully enforceable through permit conditions, agreements, or other measures.

E. When a project will affect state-owned historical resources, as described in Public Resources Code Section 5024, and the lead agency is a state agency, the lead agency shall consult with the State Historic Preservation Officer as provided in Public Resources Code Section 5024.5. Consultation should be coordinated in a timely fashion with the pre-paration of environmental documents.

3. CEQA applies to effects on archaeological sites.

A. When a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource, as defined in subsection (A) [see Page 29].

B. If a lead agency determines that the archaeological site is an historical resource, it shall refer to the provisions of Section 21084.1 of the Public Resources Code, and this section, Section 15126.4 of the Guidelines, and the limits contained in Section 21083.2 of the Public Resources Code do not apply.

C. If an archaeological site does not meet the criteria defined in subsection (a), but does meet the definition of a unique archeological resource in Section 21083.2 of the Public

Resources Code, the site shall be treated in accordance with the provisions of section 21083.2. The time and cost limitations described in Public Resources Code Section 21083.2 (c-f) do not apply to surveys and site evaluation activities intended to determine whether the project location contains unique archaeological resources.

D. If an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or EIR, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.

4. When an initial study identifies the existence of, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code §5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the Native American Heritage Commission. Action implementing such an agreement is exempt from:

   A. The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5).

   B. The requirements of CEQA and the Coastal Act.

5. In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken:

   A. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

      1. The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and

      2. If the coroner determines the remains to be Native American:

         1. The coroner shall contact the Native American Heritage Commission within 24 hours.

         2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.

         3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or

   B. Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.

      1. The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.

2. The descendant identified fails to make a recommendation; or

3. The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

6. As part of the objectives, criteria, and procedures required by Section 21082 of the Public Resources Code, a lead agency should make provisions for historical or unique archaeological resources accidentally discovered during construction. These provisions should include an immediate evaluation of the find by a qualified archaeologist. If the find is determined to be an historical or unique archaeological resource, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation should be available. Work could continue on other parts of the building site while historical or unique archaeological resource mitigation takes place.

Authority: Sections 21083 and 21087, Public Resources Code.

Reference: Sections 21083.2, 21084, and 21084.1, Public Resources Code; Citizens for Responsible Development in West Hollywood v. City of West Hollywood (1995) 39 Cal.App.4th 490.

15126.4. Consideration and Discussion of Mitigation Measures Proposed to Minimize Significant Effects.

2. Mitigation Measures Related to Impacts on Historical Resources.

(1) Where maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation or reconstruction of the historical resource will be conducted in a manner consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (1995), Weeks and Grimmer, the project's impact on the historical resource shall generally be considered mitigated below a level of significance and thus is not significant.

(2) In some circumstances, documentation of an historical resources, by way of historic narrative, photographs or architectural drawings, as mitigation for the effects of demolition of the resource will not mitigate the effects to a point where clearly no significant effect on the environment will occur.

(A) Public agencies should, wherever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature. The following factors shall be considered and discussed in an EIR for a project involving such an archaeological site:

(B) Preservation in place may be accomplished by, but not limited to, the following:

1. Planning construction to avoid archaeological sites;

2. Incorporation of sites within parks, greenspace, or other open space;

3. Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site;

4. Deeding the site into a permanent conservation easement.

(C) When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historic Resources Regional Information Center. Archaeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 Health and Safety Code.

(D) Data recovery shall not be required for an historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource, provided that the determination is documented in the EIR and that the studies are deposited with the California Historical Resources Regional Informa-tion Center.

(E)

PALEONTOLOGICAL OVERVIEW

The Paleontological overview for this general area (on file, McKenna et al.) notes that this area of Los Angeles County is mapped as consisting of "... Quaternary gravels and sands from the Los Angeles River floodplain." Further, these deposits were noted as non-fossil bearing deposits and the potential for fossil specimens was considered relatively low. Excavations that extend through the recent alluvial deposits may impact fossil bearing substrates (older Quaternary). However, the shallow nature of the proposed excavations (under 12 feet from present grade) indicate paleontological resources will not be impacted by the project. If older alluvium is identified, paleontological monitoring should be conducted for the remainder of the excavations.

RESULTS OF THE INVESTIGATIONS

McKenna et al. completed an archaeological records check for the currently proposed alignment and determined that the majority of the alignment was not previously surveyed, but areas near the

Glendale Freeway and the existing Taylor Yard Park were surveyed. No resources were recorded for the area, although San Fernando Road is an historic alignment, the nearby railroads are of historic value, and at least two significant structures are adjacent to the proposed pipeline alignment. Only San Fernando Road is within the project right-of-way.

The windshield survey resulted in a confirmation that all proposed excavations will be completed along the existing historic roadway (Appendix D) and, because of the pavements, no natural soils were visible. Historic-period structures were identified along the route, clustering in some areas and sporadically existing in others. In addition, the survey indicated that some structures reported to be historic were, in fact, modern replacements.

SUMMARY AND RECOMMENDATIONS

The project alignment has a low level of sensitivity for paleontological and a moderate level of sensitivity for archaeological resources. Historic structures are located along the periphery of the alignment. Despite the fact that the project is within a densely developed urban area, only the historic San Fernando Road alignment is within the right-of-way. The proposed project is designed to avoid any direct or indirect impacts to historic structures, but it will impact the historic road alignment. Avoidance of impacts to structures will be facilitated through maintenance of project-related boundaries and logistical excavation to avoid unnecessary vibrations, dust, and/or settlement of nearby historic-period structures. Avoidance of impacts to San Fernando Road cannot be avoided. Since the current roadway reflects the modern right-of-way, the earlier alignment was much narrower and historic archaeological resources may be present within the project right-of-way. Therefore, McKenna et al. recommends that the excavations be monitored by a professional, qualified archaeologist with historic archaeological experience. In accordance with current guidelines, the monitor must have the authority to halt any activities that may be adversely impacting archaeological resources.

If human remains are uncovered at any time, all activities on the property must be halted, the L.A. County Coroner must be notified and permitted to examine the remains. If the remains are found to be of Native American origin, the Gabrielino/Fernandeno representatives must be permitted to contribute to the discussions pertaining to the disposition of the remains. Further, if any evidence of Native American resources area identified, a Native American monitor should be added to the overall monitoring program.

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Any changes to this report will require the written approval of Jeanette A. McKenna, Principal Investigator, McKenna et al.

Jeanette A. McKenna, Principal Investigator, McKenna et al. — Date 10-11-06

REFERENCES

Altschul, Jeffrey H., Jeffrey A. Homburg, and Richard Ciolek-Torrello
1992 Life in the Ballona: Archaeological Investigations at the Admiralty Site (CA-LAN-47) and the Channel Gateway Site (CA-LAN-1596-H). *Statistical Research, Inc. Technical Series 33.* Tucson, Arizona.

Another Year in L.A.
2006 Another Year in L.A., 2121 North San Fernando Road, #13. http://www.anotheryearinla.com/directions_to-ANOTHER_YEAR-IN=LA.htm.

answers.com
2006 San Fernando Road. http://answers.com/topic/san-fernando-road.

Antevs, Ernst
1953 On the Division of the Last 20,000 Years. *University of California Archaeological Survey Reports* 22:5-8. Berkeley, California.

Axelrod, Daniel L.
1981 Holocene Climate Changes in Relation to Vegetation Disjunction and Speciation. *American Naturalist* 117:847-870.

Bancroft, H.
1886 Cited in Becker 1999.

Basgall, Mark R. and Delbert True
1985 Archaeological Investigations in Crowder Canyon, 1973-1984: Excavations at Sites SBR-421B, SBR-421C, SBR-421D, and SBR-713. Far Western Anthropological Research Group, Davis, California. On file, San Bernardino County Museum, Archaeological Information Center, Redlands, California.

Beals, R.L. and J.A. Hester, Jr.
1974 Indian Land Use and Occupancy in California. American Indian Ethnohistory: *California and Basin-Plateau Indians*, Vol. III, ed. By D.A. Horr. Garland, New York.

Bean, Lowell J.
1972 Mukat's People: The Cahuilla Indians of Southern California. University of California Press, Berkeley, California.

Bean, Lowell J. and Florence Shipek
1978 Luiseno. In: Handbook of North American Indians, Vol. 8: California, ed. by Robert F. Heizer, pp. 550-563. Smithsonian Institution, Washington, D.C.

Bean, Lowell J. and Charles Smith
1978 Gabrielino. In: Handbook of North American Indians: California, Volume 8, pp. 538-550. Smithsonian Institution, Washington, D.C.

Becker, Kenneth
1999 Boundary Definition at Tujunga Village (CA-LAN-167), Hansen Dam Flood Control Basin, Los Angeles County, California. *Statistical Research, Inc. Technical Series* 99-59. Tucson, Arizona.

Bedwell, S.F.
1970 Prehistory and Environment of the Pluvial Fort Rock Lake Area, South-Central Oregon. Unpublished Ph.D. dissertation. Department of Anthropology, University of Oregon, Eugene, Oregon.

Benedict, Ruth
1924 A Brief Sketch of Serrano Culture. American Anthropologist 26(3):366-392.

Beroza, Barbara
1980 Prehistoric Cultural Resources Survey and Impact Assessment for a Portion of Griffith Park, Los Angeles, California. On file, California State University, Fullerton South Central Coastal Information Center. Fullerton, California.

Bolton, Herbert E.
1927 Spanish Explorations in the Southwest, 1542-1706. Charles Scribner's Sons, New York.

1971 Fray Juan Crespi: Missionary Explorer on the Pacific Coast, 1769-1774. AMS Press, New York.

Bowers, Doris
1976 A Surface Survey of Los Flores Ranch (Guapiabit). *Occasional Papers* No. 9. Archaeological Survey Association of Southern California, Los Angeles.

Bull, Charles S.
1987 A New Proposal: Some Suggestions for San Diego Prehistory. In: San Dieguito-La Jolla: Chronology and Controversy, ed. By Dennis R. Gallegos an S. M. Hector, pp. 35-44. *San Diego County Archaeological Society Research Paper* No. 1. San Diego, California.

Burbank Unified School District
1967 A History of Burbank. Prepared by the Division of Instruction, Burbank Unified School District, Burbank California. On file, Burbank Public Library.

cagenweb.com
2006 Pater Noster High School. http://www.cagenweb.com/re/losangeles/photos/THschoolArticle2.jpg.

Carbone, Larry A.
1991 Early Holocene Environment and Paleoecological Context on the Central and Southern California Coast. In: Hunter and Gatherers of Early Holocene Coastal California, ed. by J.M. Erlandson and R.H. Colten, pp. 11-17. *Perspectives in California Archaeology*, Vol. 1. University of California, Los Angeles, Institute of Archaeology, Los Angeles, California.

Carrico, Richard L.
1987 Sixty-Five Years of San Diego County Archaeology. In: San Dieguito-La Jolla: Chronology and Controversy, ed. By Dennis R. Gallegos and S.M. Hector, pp. 1-14. *San Diego County Archaeological Society, Research Paper* No. 1. San Diego, California.

Chartkoff, Joseph L. and Kerry Kona Chartkoff
1984 The Archaeology of California. Stanford University Press. Palo Alto, California.

City of Los Angeles
1994 City of Los Angeles, Cultural Affairs Department: Cultural Heritage Commission, Historic Cultural Monuments 1-588. Los Angeles, California.

Cook, (unk.)
1976 Cited in Becker 1999.

Davis, Owen
1990 Pollen Analysis of Archaeological Sites of the San Joaquin Hills Transportation Corridor Archaeological Test Excavation Sites. In: Final Rest Investigation Report and

Request for Determination of Eligibility for 23 Sites along the San Joaquin Hills Transportation Corridor, ed. by P. deBarros and H.C. Koerper. On file, California State University, Fullerton, South Central Coastal Information Center, Fullerton, California.

deBarros, Phillip, and Henry C. Koerper (eds.)
1990 Final Rest Investigation Report and Request for Determination of Eligibility for 23 Sites along the San Joaquin Hills Transportation. On file, California State University, Fullerton, South Central Coastal Information Center, Fullerton, California.

Deevy, E.S. and R.F. Flint
1957 Postglacial Hypsithermal Interval. *Science* 125:182-184.

Dixon, Keith A.
1968 Cogged Stones and Other Ceremonial Cache Artifacts in Stratigraphic Contest at ORA-58, a Site in the Lower Santa Ana River Drainage, Orange County. *Pacific Coast Archaeological Society Quarterly* 4(3):57-65.

1975 New Evidence for the Most Important Archaeological Discovery in Long Beach: The Cogged Stones and Discs of Rancho Los Cerritos. *Los Fierros* 12(2):20-31.

DMJMHN
2005 Historic Van de Kamp Bakery Escapes Demolition to Becoome Global Example for Preservation and Sustainability. http://www.dmjmhn.aecom.com/NewsMedia/45/55/index.jsp.

Drover, Christopher E.
1980 See Citation for Koerper, Drover, and Langenwalter (1983).

Drover, Christopher E.
1992 Environmental Impact Evaluation: An Archaeological Assessment of the Big Rock Creek Mining Plan, Pear Blossom, California. On file, California State University, Fullerton, South Central Coastal Information Center, Fullerton, California.

DuBois, Constance Goddard
1908 The Religion of the Luiseno and Dieguito Indians of Southern California. *University of California Publications in American Archaeology and Ethnology* 8(3):69-186. Berkeley, California.

Eberhart, Hal
1961 The Cogged Stone of Southern California. *American Antiquity* 26:361-370.

Eberhart, Hal and W. Wasson
1975 The Sasson Site (LAN-339), a Milling Stone Horizon Station in the San Gabriel Valley, California. *California Anthropologist* 5:9-45.

Elliott, Wallace W.
1967 History of San Bernardino and San Diego Counties, California, with Illustrations. Riverside Museum Press, Riverside, California. (reprint).

Ericson, Jonathon E.
1978 Obsidian Hydration Dating in California. In: *Occasional Papers in Method and Theory in California Archaeology* No. 2, pp. 43-54. Society of California Archaeology, Salinas, California.

1981 Exchange Production System in California Prehistory: The Results of Hydration Dating and Chemical Characterization of Obsidian Sources. *BAR International Series*, British Archaeological Report. Oxford, England.

Erlandson, Jon M., and Roger H. Colten
1991 An Archaeological Context for Early Holocene Studies on the California Coast. In: Hunters and Gatherers of Early Holocene Coastal California, ed. by J.M. Erlandson and R.H. Colten, pp. 1-10. *Perspectives in California Archaeology*, Vol. 1, Institute of Archaeology, University of California, Los Angeles, California.

Ezell, Paul H.
1987 The Harris Site - An Atypical San Dieguito Site or Am I Beating a Dead Horse? In: San Dieguito-La Jolla: Chronology and Controversy, ed. By Dennis R. Gallegos and S.M. Hector, pp. 15-22. *San Diego County Archaeological Society, Research Paper* No. 1. San Diego, California.

Fladmark, Knut R.
1979 Appendix II: The Tongva to 1801. Archaeological Investigations of the Big Tujunga Site (LAN-167). *University of California Archaeological Survey Annual Report* 8:137-150.

Glassow, Michael A., Larry Wilcoxon, and Jon M. Erlandson
1988 Cultural and Environmental Change During the Early Period of Santa Barbara Channel Prehistory. In: *The Archaeology of Prehistoric Coastlines*, ed. by G. Baily and J. Parkington, pp. 4-77. Cambridge University Press, Cambridge, England.

Goldberg, Susan K. and Jeanne E. Arnold
1988 Significance Evaluation of Prehistoric Archaeological Sites in the Prado Basin, California. Infotec research, Sonora, California.

Greenwood, Roberta S.
1978 Obispeno and Purisimeno Chumash. In: Handbook of North American Indians: California, Volume 8, edited by R.F. Heizer, pp. 520-523. Smithsonian Institution, Washington, D.C.

Greenwood, Roberta S., Scott Sacastio, and Peter Messick
2003 Cultural Resources Monitoring: Northeast Interceptor Sewer Project. On file, California State University, Fullerton, South Central Coastal Information Center, Fullerton, California. (LA-6837)

Grenda, Donn R.
1994 Cited in Becker 1999.

1997 Continuity and change: 8,500 Years of Lacustrine Adaptation on the Shores of Lake Elsinore. *Statistical Research, Inc. Technical Series* 59. Tucson, Arizona.

Grenda, Donn R., Christopher J. Doolittle, and Jeffrey H. Altschul
1998 House Pits and Middens: A Methodological Study of Site Structure and Formation Processes at CA-ORA-116, Newport Bay, Orange County, California. *Statistical Research, Inc. Technical Series* 69. Tucson, Arizona.

Grenda, Donn R., Christopher J. Doolittle, and Matthew A. Sterner
1998 Early Hunter-Gatherers and Historic Settlers along San Sevaine Creek: Data Recovery Efforts at the Hunter's Ridge Community Development Project. *Statistical Research, Inc. Technical Series* 98-7. Tucson, Arizona.

Gudde, Erwin G.
1969 California Place Names. The Origin and Etymology of Current Geographical Names. University of California Press, Berkeley.

Harding, M.
1951 La Jollan Culture. *El Museo* 1(1):31-38.

Hayden. Julian D.
1987 Notes o the Apparent Course of San Dieguito Development. In: San Dieguito-La Jolla: Chronology and Controversy, ed. By Dennis R. Gallegos and S.M. Hector, pp. 50-55. *San Diego County Archaeological Society, Research Paper* No. 1. San Diego, California.

Heizer, Robert F. (ed.)
1968 The Indians of Los Angeles County, California. *Pacific Coast Archaeological Society Quarterly* 5(1):1-68.

Hudson, Dee Travis
1969 The Archaeological Investigations During 1935 and 1937 at ORA-237, ORA-238, and ORA-239, Santiago Canyon, Orange County, California. Pacific Coast Archaeological Society Quarterly 5(1):1-68.

Hudson, Dee Travis
1971 Proto-Gabrielino Patterns of Territorial Organization in South Coastal California. Pacific Coast Archaeological Society Quarterly 7(2):48-76.

Hughes, Richard E., and Delbert L. True
1985 Perspective on the Distribution of Obsidians in San Diego County, California. *North American Archaeologist* 6:325-339.

Jackson, B.J.
1977 Plane Sense: A Technological and Functional Analysis of a Stone Tool Category. Unpublished Master's Thesis, Department of Anthropology, Washington State University, Pullman, Washington.

Johnson, K.L.
1966 Site LAN-2, A Late Manifestation of the Topanga Complex in Southern California Prehistory. *University of California Anthropological Records* No. 23. University of California Press, Berkeley, California.

Johnston, Bernice E.
1962 California's Gabrielino Indians. Southwest Museum, Los Angeles, California.

Jones, Terry L.
1991 Marine-Resource Value and the Priority of Coastal Settlement: A California Perspective. *American Antiquity* 56:419-443.

Kaldenberg, Russell L.
1976 Paleo-Technological Change at Rancho North Park, San Diego, California. Unpublished Master's Thesis, San Diego State University, San Diego, California.

Kaldenberg, Russell L., and Paul H. Ezell
1974 Results of the Archaeological Mitigation of Great Western Sites A and C, Located on the Proposed Rancho Park North Development Near Olivehain, California. On file, Department of Anthropology, San Diego State University, San Diego, California.

Koerper, Henry C.
1981 Prehistoric Subsistence and Settlement in the Newport Bay Area and Environs, Orange County, California. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Riverside.

Koerper, Henry C., Jonathon E. Ericson, Christopher E. Drover, and Paul E. Langenwalter
1986 Obsidian Exchange in Prehistoric Orange County. *Pacific Coast Archaeological Society Quarterly* 22(1):33-69.

1991 Cited in Becker 1999.

Koerper, Henry C., J.S. Killingley, and R.E. Taylor
1986 The Little Ice Age and Coastal Southern California Human Economy. *Journal of California and Great Basin Anthropology* 7(1):99-103.

Kowta, Makoto
1969 The Sayles Complex: A Late Milling Stone Assemblage from Cajon Pass and the Ecological Implications of Its Scraper Planes. *Publications in Anthropology* No. 6. University of California Press, Berkeley, California.

Kroeber, Alfred L.
1925 Handbook of California Indians. Bureau of Americans Ethnology Bulletin 78. Smithsonian Institution, Washington, D.C. Reprinted 1976, Dover Publications.

Laylander, Don
1991 Phase II and Extended Phase I Tests at Seven Prehistoric Archaeological Sites (CA-IMP-6297/6298, -6417, -6419, -6422/6423, -6425, -6427, and -6429) in the Kane Spring Area, Imperial County, California. On file, Caltrans, San Diego Offices.

Lockmann, Ronald Frederick
1967 Burbank, California: An Historical Geography. Unpublished Master of Arts Thesis, University of California, Los Angeles, Department of Geography. On file, Burbank Public Library.

Mason, Roger D.
1984 Eastern Corridor Alignment Study, Orange County, California. Scientific Resource Surveys, Inc., Huntington Beach, California. On file, University of California, Los Angeles, Archaeological Information Center.

Mason, Roger D., M.L. Peterson, L.P. Klug, J.E. Ericson, H.C. Koerper, A.B. Schroth, R.O. Gibson, C.D. King, and R. McCleary
1994 Newport Coast Archaeological Report: Newport Coast Settlement Systems: Analysis and Discussion, Volume 1. On file, University of California, Los Angeles, Archaeological Information Center.

Mason, Roger D. and Mark L. Peterson
1994 Results: Chronometric Analyses. In: Newport Coast Archaeological Report - Newport Coast Settlement Systems: Analysis and Discussion, Volume I, pp. 54-59. The Keith Companies Archaeological Division, Costa Mesa, California.

McCawley, William
1996 The First Angelinos: The Gabrielino Indians of Los Angeles. A Malki-Ballena Press Cooperative Publication.

McKenna, Jeanette A.
1985 CA-ORA-849: Reinvestigation of a Late Prehistoric-Historic Archaeological Site in Orange County, California. On file, McKenna et al., Whittier, California.

1986 Final Report of Archaeological Investigations at Sites CA-ORA-858, CA-ORA-859, and CA-ORA-698, Rancho de Los Alisos, Orange County, California. On file, McKenna et al., Whittier, California.

1996 Biennial Report for Archaeological Monitoring Services for the Puente Hills Landfill Expansion Areas, Whittier, Los Angeles County, California. On file, McKenna et al., Whittier, California.

McLean, Deborah
1999 Cultural Resource Assessment for Pacific Bell Mobile Services Telecommunications Facility LA 694-09, 11272 Magnolia Boulevard, North Hollywood, City and County of Los Angeles, California. On file, California State University, Fullerton, South Central Coastal Information Center, Fullerton, California.

McLeod, Samuel
2006 Personal Communication.

Meighan, Clement W.
1954 A Late Complex in Southern California Prehistory. *Southwestern Journal of Anthropology* 10:215-227.

1959a The Little Harbor Site, Catalina Island: An Example of Ecological Interpretation in Archaeology. *American Antiquity* 24:383-405.

1959b Archaeological Resources of Borrego State Park. University of California Archaeological Survey Annual Report 1958-1959 (1):27-40. Los Angeles, California.

1989 The Earliest Shell Mound Dwellers of Southern California. Paper Presented at the Circum-Pacific Prehistory Conference, Seattle, Washington.

Morales, Anthony
2006 Personal Communication.

Moratto, Michael J.
1984 California Archaeology. Academic Press, New York.

Moratto, Michael J., and Roberta S. Greenwood
1991 Historic Properties Treatment Plan San Luis Rey River Flood Control Project, San Diego County, California. On file, U.S. Army Corps of Engineers, Los Angeles District.

Moratto, Michael J., A. Schroth, J.M. Foster, D. Gallegos, R.S. Greenwood, G. Romani, M.C. Romano, L.H. Shoup, M.T. Swanson, an E.C. Gibson
1994 Archaeological Investigations at Five Site on the Lower San Luis Rey River, San Diego County, California: Final Report. On file, Greenwood and Associates, Pacific Palisades, California.

Moriarty, James R., III
1966 Cultural Phase Divisions Suggested by Typological Change Coordinated with Stratigraphically Controlled Radiocarbon Dating in San Diego. *Anthropological Journal of Canada* 4(4):20-30.

1967 Transitional Pre-Desert Phase in San Diego County, California. *Science* 155:553-556.

Moriarty, James R., III
1969 The San Dieguito Complex: Suggested Environmental and Cultural Relationship. *Anthropological Journal of Canada* 7(3):1-18.

1987 A Separate Origins Theory for Two Early Man Cultures in California. In: San Dieguito-La Jolla: Chronology and Controversy, ed. By Dennis R. Gallegos and S.M. Hector, pp. 51-62. *San Diego County Archaeological Society, Research Paper* No. 1. San Diego, California.

Moriarty, M.J., and R. Broms
1971 The Antiquity and Inferred Use of Stone Discoidals in the Southwest. *Anthropological Journal of Canada* 10(3):10-13.

Moseley, Michael, and Gerald A. Smith
1962 Archaeological Investigations of the Mojave River Drainage. *San Bernardino County Museum Association Quarterly* 9:3.

Moyer, C.C.
1969 *Historic Ranchos of San Diego*. Union Tribune, San Diego.

Munz, Philip A.
1974 A Flora of Southern California. *University of California Press*, Berkeley.

Newmark, Maurice H and Marco R. Newmark
1930 Sixty Years in Southern California - 1853-1913. Containing the Reminiscences of Harris Newmark. Houghton Mifflin Conpany, New York.

Peak & Associates
1992 Consolidate Report: Cultural Resource Studies for the Proposed Pacific Pipeline Project. On file, California State University, Fullerton, South Central Coastal Information Center, Fullerton, California. (LA-2950)

Quillen, D.K., R.L. Carrico, and D. Gallegos
1985 Archaeological Investigation as SDI-5130, Mar Lado Project, Oceanside, California. On file, San Diego State University, Southern Information Center, San Diego, California.

Rice, Glen E. and Marie G. Cottrell
1976 Report on Excavations at CA-ORA-111, Locus II. Pacific Coast Archaeological Society Quarterly 12(3):7-65.

Robinson, W.W.I
1939 The Indians of Los Angeles: Story of the Liquidation of a People. (Early California Travel Series 8); Los Angeles: Dawson. (possibly ca. 1951).

Rogers, Malcolm
1929a Archaeological Field Work in North America During 1928, California. *American Anthropologist* 21:341.

1929b Report on an Archaeological Reconnaissance in the Mojave Sink Region. *San Diego Museum of Man Papers* No. 1. San Diego, California.

1929c The Stone Art of the San Dieguito Plateau. *American Anthropologist* 21:454-467.

1938 Archaeological and Geological Investigations in an Old Channel of the San Dieguito Valley. *Carnegie Institution of Washington Yearbook* 37:344-345. Washington, D.C.

1939 Early Lithic Industries of the Lower Basin of the Colorado River and Adjacent Desert Areas. San Diego Museum of Man and La Jolla: Some Comments. In: San Dieguito - La Jolla: Chronology and Controversy, ed. By Dennis R. Gallegos and S.M. Hector, pp. 75-88. *San Diego County Archaeological Society, Research Paper* No. 1. San Diego, California.

1945 An Outline of Yuman Prehistory. *Southwestern Journal of Anthropology* 1:167-198.

Romani, John
2000 Phase I Cultural Resource Investigation at Lennar Taylor Yard. On file, California State University, Fullerton, South Central Coastal Information Center, Fullerton, California. (LA-5449)

Ross, (unk.)
1969 Cited in Becker 1999.

1970 Cited in Becker 1999.

Salls, Roy
1993 Cited in Becker 1999.

Schoenherr, Allan A.
1992 A Natural History of California. University of California Press, Berkeley, California.

Scientific Resource Surveys
1979 Archaeological Survey Report on a 1700+ Acre Parcel of Land Designated the "Campeau Project" Located in the Lake Mathews Area of Riverside County. On file, University of California, Riverside, ARU.

Security Trust & Savings Bank
1927 Ranchos de los Santos: The Story of Burbank. Burbank Branch of the Security Trust & Savings Bank, Burbank, California. On file, University of California, Los Angeles, College Library.

Smith, Brian F.
1987 A reinterpretation of the Transitional Phase. In: San Dieguito-La Jolla: Chronology and Controversy, ed. By Dennis R. Gallegos and S.M. Hector, pp. 61-71. *San Diego County Archaeological Society, Research Paper* No. 1. San Diego, California.

Smith, D. E. and F. J. Teggart (eds.)
1909 Diary of Gaspar de Portolá During the California Expedition of 1769-1770. Academy of Pacific Coast History Publications 1 (3).

Smith, Philomene C.
2000 Negative Archaeological Survey Report: Route 2 Improvements. On file, California State University, Fullerton, South Central Coastal Information Center, Fullerton, California. (LA-3647)

Strong, (unk.)
1929 Cited in Becker 1999.

Treganza, Adan E.
1950 The Topanga Culture and Southern California Prehistory. Unpublished Ph.D. dissertation. Department of Anthropology, University of California, Berkeley, California.

Treganza, Adan E., and A. Bierman
1958 The Topanga Culture: Final Report on Excavation, 1948. *University of California Anthropological Records* 20:45-86. University of California Press, Berkeley, California.

True, Delbert L.
1958 An Early Complex in San Diego County, California. *American Antiquity* 23:255-263.

1966 Archaeological Differentiation of Shoshonean and Yuman Speaking Groups in Southern California. Unpublished Ph.D. dissertation. Department of Anthropology, University of California, Los Angeles, California.

1980 The Pauma Complex in Northern San Diego County: 1978. *Journal of New World Archaeology* 3(4):1-39.

True, Delbert L., Clement W. Meighan, and H. Crew
1974 Archaeological Investigations at Molpa, San Diego County, California. *Publications in Anthropology* No. 11. University of California, Berkeley, California.

Vanderpot, Rein, Jeffrey H. Altschul, and Donn R. Grenda
1993 Whelan Lake (CA-SDI-6010): A La Jollan Campsite on the Lower San Luis Rey River, San Diego County, California. *Statistical Research, Inc. Technical Series* 39. Tucson, Arizona.

Van Dervender, T.R., and W.G. Spaulding
1979 Development of Vegetation and Climate in the Southwestern United States. *Science* 204:710-710.

Van Wormer, Stephen
1985 Historic Resource Overview and Survey for the Los Angeles County Drainage Area Review Study. On file, California State University, Fullerton, South Central Coastal Information Center, Fullerton, California.

Wallace, William J.
1955 A Suggested Chronology for Southern California Coastal Archaeology. South-western Journal of Anthropology 11(3):214-230.

1978 Post Pleistocene Archaeology, 9000 to 2000 B.C. In: Handbook of North American Indians, Vol. 8: California. Ed. by W.C. Sturtevant, pp. 25-36. Smithsonian Institution. Washington, D.C.

Warren, Claude N.
1966 The San Dieguito Type Site: M.J. Rogers' 1938 Excavation in the San Dieguito River. *San Diego Museum of Man Papers* No. 5. San Diego, California.

1967 The San Dieguito Complex: A Review and Hypothesis. *American Antiquity* 32:233-236.

Warren, Claude N.
1968 Cultural Traditions and Ecological Adaptation on the Southern California Coast. Eastern New Mexico University Contributions in Anthropology 1(3):1-14.

1987 San Dieguito and La Jolla: Some Comments. In: San Dieguito-La Jolla: Chronology and Controversy, ed. By Dennis R. Gallegos and S.M. Hector, pp. 73-85. *San Diego County Archaeological Society, Research Paper* No. 1. San Diego, California.

Warren, Claude N., and Max G. Pavesic
1963 Shell Midden Analysis of Site SDI-603 and Ecological Implications for Cultural Development of Batiquitos Lagoon, San Diego County. In: Archaeological Survey Annual report, 1962-1963, pp. 407-438. University of California, Los Angeles, California.

Warren, Calude N., and Delbert L. True
1961 The San Dieguito Complex and Its Place in California Prehistory. In: Archaeological Survey Annual report, 1960-1961, pp. 246-338. University of California, Los Angeles, California.

Warren, Claude N., D.L. True, and Ardith A. Eudey
1961 Early Gathering Complexes of Western San Diego County: Results and Interpretations of an Archaeological Survey. University of Illinois Press, Champaign, Illinois.

Weide, Margaret L.
1968 Cultural Ecology of Lakeside Adaptation in the Western Great Basin. Unpublished Ph.D. dissertation. Department of Anthropology, University of California, Los Angeles, California.

White, Raymond C.
1963 Luiseno Social Organization. *University of California Publications in American Archaeology and Ethnology* 48(2):91-194.

wikipedia.org
2006 San Fernando Road. http://en.wikipedia.org/wiki/San_Fernando_Road.

Willey, Gordon R., and Jeremy A. Sabloff
1980 A History of American Archaeology. 2nd edition. W.H. Freeman, San Francisco, California.

Wlodarski, Robert J.
1991 A Phase I Archaeological Study for Eight Areas Proposed for the New Los Angeles Police Training Academy, and Driver Training Facility, City of Los Angeles, Los Angeles County, California. On file, California State University, Fullerton, South Central Coastal Information Center, Fullerton, California. (LA-2517)

Wlodarski, Robert J.

1996 A Phase I Archaeological Study for the Telacu Point Project Located at 3100 Fletcher Drive, City and County of Los Angeles, California. On file, California State University, Fullerton, South Central Coastal Information Center, Fullerton, California. (LA-3647)

1996 A Phase I Archaeological Study for the Telacu Point Project Located at 3100 Fletcher Drive, City and County of Los Angeles, California. On file, California State University, Fullerton, South Central Coastal Information Center, Fullerton, California. (LA-4046)

Woodman, Craig F., James L. Rudolph, and Teresa P. Rudolph

1991 Western Chumash Prehistory: Resource Use and Settlement in the Santa Ynez River Valley. On file, U.S. Army Corps of Engineers, Los Angeles District.