APPENDIX B

~~SUMMARY OF~~ MITIGATION MEASURES

B.1 Mitigation Measures

B.2 Mitigation Monitoring Program

APPENDIX B.1
MITIGATION MEASURES

B.1. Mitigation Measures

This appendix includes a list of mitigation measures the Los Angeles Department of Water and Power (LADWP) has agreed to implement for the Upper Reach Project. These measures were introduced in the Initial Study (IS) and within this Environmental Impact Report (EIR) in Section 3. The mitigation measures identified for the Upper Reach Project are presented below by environmental issue area. The notation in parenthesis indicates the document where the mitigation measures were identified.

Aesthetics (IS)

AES-1 LADWP shall use the minimum amount of construction lighting necessary to safely light the construction worksite.

AES-2 LADWP shall design, install, and shield all necessary construction lighting such that it minimizes the amount of spill or reflected light onto property adjacent to the construction site.

AES-3 LADWP shall notify all persons and organizations potentially affected by nighttime lighting and shall coordinate the construction schedule such that conflicts are minimized. Coordination shall involve provision of an LADWP contact person to whom affected persons may direct lighting complaints.

Air Quality (EIR)

AQ-1 LADWP shall implement the following mitigation measures to reduce NOx, PM10, and PM2.5 emissions from non-road construction vehicles during construction:

- Tier ~~1~~ 2 non-road diesel mobile construction equipment shall be used on-site. Prior to construction, the construction contractor shall provide LADWP a list of equipment over 50 hp and forecasted to be used for at least a month during construction, including model year, engine horsepower rating, and applicable tier designation.
- Tier 2 or newer diesel generators, or alternative-fueled (e.g., gaseous fuel) generators shall be considered as an alternative to diesel generators for use during the pipe jacking/tunnel operations.
- Construction equipment shall be maintained in tune per manufacturer's specifications. The construction contractor shall provide LADWP with maintenance records on a monthly basis for non-road diesel mobile construction equipment over 50 hp used for at least a week in any given month, including but not limited to records of engine tune-ups.
- Diesel engine idle time shall be restricted to no more than five minutes, except for construction equipment that needs to be maintained at idle to perform.

Biological Resources (IS)

BIO-1 Pre-construction surveys for nesting raptors shall be conducted in areas where above ground construction will be occurring from Johnny Carson Park south to the end of the project alignment. The survey shall be conducted by a qualified ornithologist or wildlife biologist to ensure that no raptor nests will be disturbed during project implementation. A pre-construction survey shall be conducted no more than 14 days prior to the initiation of construction activities during the early part of the breeding season (January through April) or no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). During this survey, the qualified biologist shall inspect all trees in and immediately adjacent to the impact areas for raptor nests. If an active raptor nest is located within 300 feet of the project area, the ornithologist, in

consultation with CDFG, shall determine the extent of a construction-free buffer zone to be established around the nest until the young have fledged.

BIO-2 During construction, the discharge rate of hydrostatic test water within or upstream of soft-bottomed segments of the Los Angeles River (specifically in the soft-bottomed segment adjacent to Griffith Park) or its tributaries, shall be compatible with the range of flows naturally occurring within the affected reach during that time of the year to avoid or reduce impacts to the aquatic environment. This measure shall be implemented to the degree possible without conflicting with any requirements imposed by the Regional Water Quality Control Board.

BIO-3 If mature trees will be directly or indirectly impacted by project construction, LADWP will comply with all Los Angeles City and Burbank City tree ordinances. A mature tree is defined as having a DBH (diameter at breast height) of 4 inches or greater.

Cultural Resources (IS)

CUL-1 LADWP shall conduct spot-monitoring (the extent and duration will be dependent upon the excavation schedule) along the pipeline alignment located on and south of Burbank Boulevard during construction activities. The extent and locations for spot monitoring will be determined by a qualified historian based on review of the final excavation plan; all monitoring locations will be coordinated with the LADWP. Monitoring shall be conducted by a qualified historian.

CUL-2 LADWP shall conduct archaeological monitoring during ground disturbing activities along and south of Burbank Boulevard. The extent and location of monitoring will be determined by a qualified archeologist based on review of the final excavation plan; all monitoring locations will be coordinated with the LADWP. Archaeological resource monitoring locations shall be mapped and flagged prior to construction. Monitoring shall be conducted by a qualified archaeological monitor familiar with the cultural resources of southern California.

In the event a potential significant archeological resource is discovered anywhere along the pipeline alignment, 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-3 LADWP shall require the qualified archeologist to provide a cultural resources briefing prior to the start of construction for all construction personnel. If construction personnel discover a cultural resource in the absence of an archeological monitor, construction shall be halted and a qualified archeologist shall be contacted to make an immediate evaluation of significance and recommend appropriate treatment of the resource.

CUL-4 LADWP shall conduct paleontological monitoring during ground disturbing activities (excavation, trenching, boring, drilling, etc.) in the area of the Los Angeles River and the Headworks Spreading Grounds. The extent and location of monitoring will be determined by a qualified paleontologist based on review of the final excavation plan; all monitoring locations will be coordinated with the LADWP. Paleontological resource monitoring locations shall be mapped and flagged prior to

construction. Monitoring shall be conducted by a qualified paleontologist familiar with paleontological resources of southern California.

In the event a potentially significant paleontological specimen is uncovered, all work shall temporarily cease within the immediate area of the find until the specimen can be removed and assessed by the qualified paleontologist. If the material is determined to be significant, an adequate course of action shall be determined in consultation with the qualified paleontologist and LADWP, consistent with the Standards of Professional Paleontologists. Construction activity shall not resume until authorization has been provided by the LADWP and the qualified paleontologist.

CUL-5 LADWP shall require the qualified paleontologist to provide a briefing prior to the start of construction for all construction personnel. If construction personnel discover a paleontological resource in the absence of a monitor, construction shall be halted and a qualified paleontologist shall be contacted to make an immediate evaluation of significance and recommend appropriate treatment of the resource.

CUL-6 In the event that human remains or potential human remains are discovered, construction activities within the immediate area of the find shall be immediately halted. The LADWP Construction Project Manager shall immediately notify the LADWP Project Manager and the County Coroner. The County Coroner will make a determination as to the origin of the remains and, if determined to be of Native American origin, the Native American Heritage Commission (NAHC) will be contacted. In consultation with the Most Likely Descendant, the NAHC and qualified archeologist shall determine the disposition of the remains in accordance with California Health and Safety Code §7050.5 and CEQA Guidelines §15064.5(e). If the remains are not of Native American origin, the County Coroner will make a determination as to the disposition of the remains. Construction may continue once compliance with all relevant sections of the California Health and Safety Code have been addressed and authorization to proceed issued by the County Coroner and the LADWP.

Geology and Soils (IS)

GEO-1 A geotechnical investigation shall be conducted to determine areas that will be susceptible to liquefaction related phenomena. This investigation shall be conducted by a qualified professional and conform to the requirements of the City of Los Angeles. Based on the findings of this investigation, appropriate mitigation measures may be developed to reduce potential damage due to liquefaction related phenomena. Results of the geotechnical investigation will support design considerations of constructing liquefaction and ground lurching mitigation measures and/or repairing the damaged pipeline. The latter option is the standard practice for non-hazardous pipelines and typically includes consideration of economic factors.

Hazards and Hazardous Materials (IS)

HAZ-1 LADWP or its construction contractor shall store fuel, oil, and other hazardous materials only at designated sites. Quantities of all hazardous materials stored on-site shall be avoided or minimized, and substitution of non-hazardous materials for hazardous materials shall be implemented to the extent practicable. Each hazardous material container shall be clearly labeled with its identity, handling and safety instructions, and emergency contact. Similar information shall be clearly

available and visible in the storage areas. Storage and transfer of such materials shall not be allowed within 100 feet of streams or sites known to contain sensitive biological resources except with the permission of LADWP Environmental Services personnel. Material Safety Data Sheets shall be made readily available to the Contractor's employees and other personnel at the various work sites. The accumulation and temporary storage of hazardous wastes shall not exceed 90 days. Soils contaminated by spills or cleaning wastes shall be contained and shall be removed to an approved disposal site. Disposal of hazardous wastes shall be in compliance with the applicable laws and regulations.

HAZ-2 LADWP or its construction contractor shall maintain construction equipment to minimize fuel, oil and other potentially hazardous material spills. Stationary power equipment, such as engines, pumps, generators, welders, and air compressors, shall be positioned over drip pans.

HAZ-3 LADWP or its construction contractor shall store hazardous materials in containers with secondary containment.

HAZ-4 Federal, state, and local notification requirements shall be followed for any release of hazardous materials that exceeds the reportable quantity.

HAZ-5 LADWP or its construction contractor shall protect tanks temporarily placed for refueling from potential traffic hazards by vehicle barriers.

HAZ-6 LADWP shall conduct environmental briefings to communicate environmental concerns and appropriate work practices, including spill prevention, emergency response measures, and implementation of proper best management practices, to all construction personnel. The briefings shall emphasize site-specific physical conditions to improve hazard prevention (e.g., identification of potentially hazardous substances and sites along the pipeline route) and shall include a review of all site-specific plans. A monitoring program shall also be implemented to ensure that the plans are followed throughout the period of construction.

Hydrology and Water Quality (IS)

WQ-1 All hydrostatic test water shall be treated for contaminants and toxic substances to meet the NPDES hydrostatic test permit before being discharged into surface waterbodies, as approved by the local Regional Water Quality Control Board or Bureau of Sanitation. All hydrostatic test water that does not meet the NPDES hydrostatic test permit requirement shall be discharged to an appropriate waste handling facility and not to surface waterbodies.

Land Use and Planning (IS)

L-1 Fifteen days prior to construction, LADWP shall inform property and business owners, schools, medical centers, and other public facilities of the location and duration of construction. Within each construction phase, notification of construction activities shall be provided by placing advertisements in local and/or community newspapers. The advertisement shall state when and where construction will occur and identify construction activities that would restrict, block, or require a detour to access existing residential properties, retail and commercial businesses, and public facilities (e.g., schools and memorial parks). The notice shall also state the type of construction activities that will be

conducted, duration of construction activities, and provide LADWP contact information for public questions or concerns. If construction delays of more than 30 days occur, an additional notice shall be placed in local and/or community newspapers.

Noise and Vibration (EIR)

N-1 LADWP or its construction contractor shall provide advance notice, between two and four weeks prior to construction, by mail to all residents or property owners and businesses including the television and recording studios within 300 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 two weeks 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, and place signs at construction sites with construction contact information.

The notices shall provide a contact person and hotline where residents or business owners can call on a 24-hour basis with questions or comments during the construction period. LADWP or its construction contractor shall promptly respond to all inquiries regarding construction noise and vibration. On-site measurements may be needed to determine if noise or vibration levels are significantly above expected levels. Notices and construction signs will include a website address, which will be update quarterly and where interested parties can obtain construction and project-related information.

N-2 All machinery to be used on-site shall be equipped with the best available exhaust mufflers and any applicable "hush kits." No machinery shall be allowed on-site which emits noise levels in excess of 75 dBA when measured at a distance of 50 feet from the machine, unless technically infeasible due to the nature of the machine or its operation. LADWP or its contractor shall substitute quieter machinery, wherever feasible.

N-3 All machinery shall be maintained in good working order and lubricated as necessary to minimize unnecessary squeals, groans, and other noise. All cabinets, panels, covers, shrouds, and similar components shall be securely fastened to ensure that they do not create excessive noise due to vibration.

N-4 LADWP or its construction contractor shall turn off all unnecessary machinery. Delivery and hauling trucks shall not sit with their engines idling for periods exceeding 5 minutes. The contractor shall post signs advising drivers to turn off idling engines.

N-5 LADWP or its construction contractor shall erect temporary noise-barriers to shield nearby residences and other sensitive receptors or land uses from direct exposure to airborne construction noise. These barriers shall be erected to reduce construction noise levels to 70 dBA or below and to maintain one-hour average noise levels below 75 dBA at any sensitive receptor or land use. The *RSCI Upper Reach Noise and Vibration Study* (Appendix C) includes recommendations for achieving these noise levels. For example, barriers shall consist of commercially available noise-control curtains, in-situ fabricated sound walls, or equivalent barrier with an overall sound-transmission class rating of

STC-28 or higher. All barriers shall be constructed to contain no unnecessary holes or gaps. Where access through the barrier is required, overlapping sections shall be constructed to prevent noise escaping through the opening. The most appropriate barrier shall be determined specific to each situation..

N-6 The use of noise producing signals, including horns, whistles, alarms, and bells shall be for safety warning purposes only.

N-7 LADWP or its construction contractor shall perform noisy work off-site and away from any residential areas wherever feasible. Such off-site activities may include rock-crushing, materials pre-fabrication, and equipment maintenance.

N-8 All trucking shall be constrained to major roadways (e.g., Lankershim Boulevard, Burbank Boulevard), to the extent feasible, to limit use of residential side streets. The contractor shall establish designated truck routes to serve each project area. All subcontractors shall also be required to adhere to the designated truck routes.

N-9 LADWP or its construction contractor shall restrict deliveries to those hours permitted by the City of Los Angeles and City of Burbank. Staging areas in the vicinity of sensitive receptors and land uses receivers shall be locked after hours, and shall have signs prominently displaying operating hours.

N-10 LADWP or its construction contractor shall instruct all personnel, including subcontractor personnel, of the necessity for, and methods of, controlling noise and vibration impacts on sensitive receptors and land uses. Instruction ~~should~~ shall occur before the start of construction. ~~enters any noise-sensitive areas.~~ LADWP shall provide instruction on the necessity for controlling noise and vibration impacts to contractor at project kick-off meeting and advise the contractor to provide updates at monthly construction meetings. Contractor shall be responsible for instruction to on-site personnel.

N-11 LADWP or its construction contractor shall monitor noise and vibration under the guidance of an independent qualified acoustical consultant along the project alignment to ensure the measures described in N-1 through N-10 are effectively reducing noise levels. Monitoring shall be conducted quarterly and documented. Monitoring shall include additional spot-checks of the noise and vibration levels near sensitive receptors/land uses including the television and recording studios and any additional measurements to resolve issues reported as part of the 24-hour hotline required as part of Mitigation Measure N-1. LADWP, under the guidance of the acoustical consultant, shall have the authority to cease any construction activity which significantly exceeds noise thresholds or is causing substantial disturbance to sensitive receptors or land use (as determined by the number of concerns received at a specific location) until additional noise or vibration-reducing measures are implemented. The qualified acoustical consultant will prepare a construction noise and vibration plan that documents monitoring events, monitoring thresholds, and incorporates other noise and vibration mitigation measures identified in the EIR.

N-12 LADWP or its construction contractor shall take all reasonable measures necessary to maintain ground-vibration levels below a peak-particle velocity of 0.02 inches per second (72 VdB) at any sensitive receptor or land use as verified during periodic monitoring by a qualified acoustical

consultant required as part of Mitigation Measure N-11. Such measures may include any of the following:

- Adjust the speed of the TBM cutting wheel (it is possible that the rotational speed of the cutting wheel may coincide with natural frequencies of nearby structures, thus amplifying the induced vibration; increasing or decreasing the wheel speed would likely reduce this impact).
- Use alternate TBM cutting surfaces (different cutting surfaces, if available, may induce varying levels of vibration into the soil, particularly with regard to soil composition and condition).
- Minimize the undulations and roughness of muck-train tracks (a muck car which rolls smoothly over its tracks will induce less vibration into the surrounding soils).
- Minimize the number of junctions in the muck-train tracks (previous experience indicates that muck-train vibration impacts are greatest near junctions in the tracks, where disjoints are likely to occur in the rails).
- Minimize gaps between adjoining rails.
- Mount muck-train tracks on resilient pads or springs.
- Maintain roundness of muck-train wheels.
- Lessen the load of the muck-trains (lightly-loaded cars will induce less vibration into surrounding soils than heavily-laden cars).

N-13 No less than 60 days prior to construction, LADWP or its construction contractor shall identify historic and fragile buildings within 200 feet of the tunneling portions of the alignment. Buildings shall be identified in the field and, as necessary, a building inspector or architectural historian may be needed to support the identification of these buildings. If buildings are identified that are in poor condition and therefore may be adversely affected by ground vibration, or buildings are considered historical based on local, state, or federal designations, then additional information shall be documented on those buildings through an exterior evaluation of the condition of the buildings and photo documentation. The purpose of this focused survey is to document the current condition of older buildings along the tunneling portion of the alignment, if any, prior to the start of construction and to assess whether there is any change in the conditions of the buildings during or after construction. If there is reason to believe that a structure may be potentially damaged during project construction, then LADWP in conjunction with its construction contractor will determine if there are measures that can be taken to reduce vibration impacts to the building or structure.

Recreation (EIR)

R-1 No less than 60 days prior to construction, LADWP shall coordinate construction activities and the project construction schedule with the City of Burbank, Department of Parks and Recreation and City of Los Angeles, Department of Parks and Recreation regarding the use of a portion of Johnny Carson Park as a construction staging area. This coordination shall include consideration of heavy recreational use periods, including major holidays, in construction scheduling, and providing construction notification at park facilities and offices. The notice shall also identify alternate park facilities. In addition, coordination shall include discussion of the schedule and planning for restoration of the affected park area (vegetation and infrastructure including irrigation systems and park amenities) after construction.

Transportation and Traffic (EIR)

T-1 Prior to the start of construction, LADWP shall submit a Construction Traffic Management Plan to the Los Angeles Department of Transportation and City of Burbank for review and approval prior to the start of any construction work. The plan shall show the location of roadway or lane closures, traffic detours, haul routes, hours of operation, and local access (maintenance of), including bike lanes if applicable. The Plan shall also discuss the use of flag persons, warning signs, lights, barricades, cones, etc. according to standard guidelines outlined in the Caltrans Traffic Manual, the Standard Specifications for Public Works Construction, and the Work Area Traffic Control Handbook (WATCH).

T-2 Pending approval from the Los Angeles Department of Transportation, the LADWP or its construction contractor shall implement the following roadway measures during construction:

- **Lankershim Boulevard**. Three travel lanes shall be provided during the construction period - two travel lanes in the peak direction of travel. For pit/shaft construction at the Lankershim Boulevard and Hart Street intersection, two lanes of travel may not be possible for the peak travel time/direction (southbound in the a.m. peak period). In order to avoid significant traffic impacts, a recommended alternate route (not a full detour route) shall be established and signed for southbound traffic on Lankershim Boulevard. This route shall utilize eastbound Sherman Way, southbound Tujunga Avenue, and westbound Hart Street.
- **Burbank Boulevard**. LADWP shall provide narrower rectangular working areas for jacking pit and shaft operations, where feasible, to provide for two travel lanes along the narrower portions of Burbank Boulevard. Work area width shall be reduced to 25 to 30 feet to allow for two 10-foot temporary travel lanes.
- **Forest Lawn Drive**. Directional capacity (westbound in the a.m. peak and eastbound in the p.m. peak) shall be considered in roadway closure planning. The provision of two travel lanes in the peak direction, while providing one travel lane for the opposite direction of traffic flow, shall be provided. This peak provision may not be possible within the vicinity of the pit/shaft work areas.

T-3 At the egress point on the eastern side of the Johnny Carson Park staging area site, flag persons shall be provided for truck movements from the site to the SR-134 eastbound on-ramp.

T-4 So that delays are not significant for motorists on Bob Hope Drive and Riverside Drive, flag persons shall limit truck movements into and out of the site to one or two trucks at a time. Inbound truck movements shall be scheduled to allow this management to be effective, and outbound truck movements should be held if necessary.

T-5 LADWP shall provide a minimum of 48-hour advance notification of the potential for disrupted access to and parking for any business, residence, or recreational facility that may experience delayed access or reduced parking capacity in the vicinity. The notification shall include information on restoring access and the estimated amount of time that access may be blocked.

T-6 If vehicular access to businesses, residences, and recreational facilities cannot be restored within eight (8) hours, LADWP or its construction contractor shall provide a one lane temporary vehicular bridge for access (LADWP Specification F01560 - Project Controls, Section 3.07D).

T-7 The westbound left turn lane into the Forest Lawn cemetery shall be maintained during proposed project construction, as well as the right turn access into the cemetery from the eastbound curb lane.

T-8 LADWP shall coordinate in advance with emergency service providers to avoid restricting movements of emergency vehicles. Police departments, fire departments, ambulance services, and paramedic services shall be notified in advance by LADWP of the proposed locations, nature, timing, and duration of any construction activities and advised of any access restrictions that could impact their effectiveness. At locations where access to nearby property is blocked, provision shall be ready at all times to accommodate emergency vehicles, such as plating over excavations, short detours, and alternate routes in conjunction with local agencies. The Traffic Construction Management Plan (T-1) shall include details regarding emergency services coordination and procedures.

T-9 LADWP shall coordinate in advance with City of Los Angeles Department of Transportation (LADOT), City of Burbank, and Metropolitan Transportation Authority (Metro) to avoid restricting movements of public transportation. Notification shall include proposed locations, nature, timing, and duration of any construction activities and any access restrictions that could impact existing bus stops and service routes. The Traffic Construction Management Plan (Mitigation Measure T 1) shall include details regarding public transportation coordination and procedures. Copies of the plan shall be provided to the LADOT, City of Burbank, and Metro.

T-10 LADWP shall ensure bicycle route closure signs are posted at major intersections to the west and east of the construction area (Griffith Park area and Barham Boulevard).

Other Identified Measures (EIR)

O-1 LADWP shall prepare a memorial park Construction Management Plan to mitigate impacts related to funeral processions leading into the Forest Lawn Memorial Park and Mount Sinai Memorial Park, and to ensure visitors to the memorial parks have reasonable access to the site during operating hours. The plan shall be prepared to include all Final EIR mitigation measures that apply to the memorial parks, such as T-7, and include the following measures:

- Meeting Prior to Start of Construction
- Limit Visibility of Equipment
- Construction Personnel Contact Information
- Construction Vehicle Parking
- Advance Notification to Forest Lawn and Notification from Forest Lawn to LADWP
- No Construction on Holidays or Sundays
- Priority for Funeral Processions

APPENDIX B.2

MITIGATION MONITORING PROGRAM

B.2. Mitigation Monitoring Program

B.2.1 Introduction

Pursuant to CEQA and the CEQA Guidelines, when a Lead Agency makes findings of significant effects in adopting an EIR, the agency must also adopt a program for the monitoring of mitigation measures identified in the EIR. The primary purpose of the monitoring program is to ensure that the mitigation measures identified in the EIR are implemented and that environmental effects are minimized. This Mitigation Monitoring Program provides the recommended mitigation measures and the monitoring/reporting requirement and implementation phase/action for each measure.

B.2.2 Project Summary

The Los Angeles Department of Water and Power (LADWP) proposes to construct a new larger River Supply Conduit (RSC) pipeline to replace the Upper Reach of the existing RSC pipeline in a new alignment. The Upper Reach (proposed project) extends from the North Hollywood Pump Station to the Hollingsworth Spillway north of Griffith Park. The proposed project would involve the construction of approximately 31,300 linear feet (about 5.92 miles) of welded steel pipeline located along/in existing street rights-of-way, existing easements such as Whitnall Highway and Headworks Spreading Grounds, new easements, and recreation areas within the Cities of Burbank and Los Angeles.

The portion of the pipeline in the City of Burbank would be approximately 11,900 feet long, and the remaining approximately 19,400 feet would be in the City of Los Angeles. The majority of the proposed pipeline would be located within city streets surrounded by urban development including both residential and commercial zones, as well as the existing Whitnall Highway utility (transmission) corridor.

The north end of the Upper Reach would begin at the North Hollywood Pumping Station, north of Vanowen Street at Morella Avenue, in the North Hollywood area of the City of Los Angeles. From the North Hollywood Pump Station, the pipeline would continue north along Morella Avenue, turning east onto Hart Street, then south onto Lankershim Boulevard, and east again onto Burbank Boulevard until reaching the Whitnall Highway. At this point the alignment would turn southeast and travel within the Whitnall Highway, continuing through Johnny Carson Park, east of Bob Hope Drive. The pipeline would then cross the Los Angeles River to Forest Lawn Drive, and continue east to the west end of the Headworks Spreading Grounds site.

LADWP Project Measures

LADWP applies standard practices in construction and operation of its projects. In addition, other measures may be added to address project-specific site conditions (i.e. groundwater assessment). This section identifies the standard practices and other measures that LADWP will apply to the project. The standard practices that will be applied to the project are summarized below.

Standard Practices:

- Project Controls
  - Air Quality and Dust Control - measures to control dust include, for example. use of water trucks and street sweepers throughout the work day; promptly remove mud, dust, dirt, or debris; implement SCAQMD Rule 403
  - Noise Control – minimize noise level during all phases of work; equipment in good operating order

  - Project Signs and Notices – requires construction sign with superintendent's, mayor's, and engineer's name; 24-hour hotline, project website address, and notice that no vehicles will be allowed on site before 7 am; construct and post signs for businesses

- Repairing and Patching – requires that repair match the previous work in material, form, and construction; also replace and repair existing paving
- Tree Pruning – detailed specification for working near or around trees and tree canopies; requires certified arborist to be consulted for any pruning of trees
- Tree Protection – requires protection of trees in project work area shown on construction drawings; requires tree protection and maintenance to performed under direction of a licensed arborist
- Landscape Irrigation
  - General Requirements – requires care in excavating and working near existing utilities; investigate utilities and show on a map
  - Trenching – conduct all excavations in accordance with section and Section F02237 Tree Protection
  - Pre-construction conference
  - Products (pipes, fittings, valve boxes); products handling; irrigation record drawings
  - Closing of Pipe and Flushing of lines – mains and laterals
  - Field Quality Control
  - Maintenance
  - Clean-up
  - Pipeline Assembly – laying of lines, backfill, compaction
- Landscape Planting - all landscape planting including soil preparation, planting, seeding, staking, and clean-up; requires certified arborist
- Tree Relocation – onsite relocation and maintenance of designated trees
- Landscape Maintenance and Plant Establishment – maintain landscape in an attractive condition

Other Measures:

Groundwater Assessment - LADWP will conduct a groundwater assessment in tunneled portions of the alignment and/or in any portion of the alignment where groundwater dewatering is necessary. The assessment will determine the likelihood that groundwater and contaminated groundwater will be encountered at the time of tunnel construction. The groundwater assessment will generally include:

- Construct piezometers/monitoring wells along the alignment from Alameda Avenue to the south side of the Los Angeles River at an approximate 500-foot spacing. The well locations should be selected to remain functional during construction.
- Contact the Mobil Service Station (3020 Olive Avenue) to gain access for monitoring of MW-6 (LUFT site downgradient well).
- Conduct routine water level and water quality monitoring prior to construction to assess groundwater conditions, seasonal water level fluctuations, and water quality. The groundwater baseline data should span about one year and include a minimum of two water quality testing events. Water quality data should be current at the time of bidding.
- Analyze the available data to determine the likelihood that groundwater and contaminated groundwater will be encountered during tunnel construction.
- If necessary, develop, or require the tunnel contractor to develop, a dewatering plan that includes storage, treatment and disposal of groundwater, that complies with the requirements of the project NPDES permit.

- Project plans and specifications will include the results of the groundwater assessment and the dewatering plan. The LADWP resident engineer will oversee the contractor's compliance with the dewatering plan and NPDES permit.

Post-construction Groundwater Level Monitoring. LADWP will conduct a post-construction monitoring program in areas where groundwater is encountered during tunnel operations, which LADWP will address as part of the recommendations of the geotechnical investigation. Monitoring will be conducted to monitor water levels two to four times per year in select piezometers and to effectively identify groundwater mounding up gradient of the tunnel. This water level monitoring program will include provisions to measure water levels in the same wells to establish pre-construction gradients. The post-construction water level data will be evaluated to determine if a mound exists and, if so, whether the liquefaction susceptibility changed (increased) in those areas.

Subsidence Monitoring Program. Prior to, during, and after project construction, LADWP will implement a Subsidence Monitoring Program in tunneled portions of the alignment and/or in any portion of the alignment where groundwater dewatering is necessary. LADWP will address subsidence monitoring as part of the recommendations of the geotechnical investigation. LADWP will analyze the potential for ground subsidence to occur during tunneling, and will identify project-specific trigger levels that require corrective action should subsidence occur. During tunneling, the monitoring program will address detection of subsidence, including measurements of groundwater levels, surface and subsurface settlement, ground movement and displacement, and movement in existing infrastructure as needed. LADWP will implement corrective actions, such as increased tunnel support, if measured displacement reaches the specified trigger level.

B.2.3 Roles and Responsibilities

The LADWP is the lead agency under CEQA for the project. As Lead Agency, the LADWP is required to monitor the development and operation of the project to ensure that the mitigation measures identified in the EIR are implemented. The LADWP Environmental Services Division will oversee the compliance program for the project. The LADWP may delegate duties and responsibilities for on-site monitoring to environmental monitors or other professional staff, however, tracking and reporting compliance will be the responsibility of LADWP staff to ensure all measures are addressed.

Table B-1. Mitigation Monitoring Program

Impact	Recommended Mitigation Measures	Monitoring/ Reporting Requirement	Implementation Phase/Action
Aesthetics			
Construction activities will require nighttime lighting, which would impact current residences in the area.	AES-1 LADWP shall use the minimum amount of construction lighting necessary to safely light the construction worksite. AES-2 LADWP shall design, install, and shield all necessary construction lighting such that it minimizes the amount of spill or reflected light onto property adjacent to the construction site. AES-3 LADWP shall notify all persons and organizations potentially affected by nighttime lighting and shall coordinate the construction schedule such that conflicts are minimized. Coordination shall involve provision of an LADWP contact person to whom affected persons may direct lighting complaints.	LADWP will incorporate lighting and notification requirements in the project plans and specifications, and require compliance by the construction contractor. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities.
Air Quality			
Project construction will generate emissions of air pollutants that would exceed regional air quality standards.	AQ-1 LADWP shall implement the following mitigation measures to reduce NOx, PM10, and PM2.5 emissions from non-road construction vehicles during construction: – Tier 2 non-road diesel mobile construction equipment shall be used on-site. Prior to construction, the construction contractor shall provide LADWP a list of equipment over 50 hp and forecasted to be used for at least a month during construction, including model year, engine horsepower rating, and applicable tier designation. – Tier 2 or newer diesel generators, or alternative-fueled (e.g., gaseous fuel) generators shall be considered as an alternative to diesel generators for use during the pipe jacking/tunnel operations. – Construction equipment shall be maintained in tune per manufacturer's specifications. The construction contractor shall provide LADWP with maintenance records on a monthly basis for non-road diesel mobile construction equipment over 50 hp used for at least a week in any given month, including but not limited to records of engine tune-ups. – ~ Diesel engine idle time shall be restricted to no more than five minutes, except for construction equipment that needs to be maintained at idle to perform.	LADWP will incorporate air quality measures in the project plans and specifications, and require compliance by the construction contractor. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities.
Biological Resources			
Project construction may affect nesting raptors along the pipeline alignment.	BIO-1 Pre-construction surveys for nesting raptors shall be conducted in areas where above ground construction will be occurring from Johnny Carson Park south to the end of the project alignment. The survey shall be conducted by a qualified ornithologist or wildlife biologist to ensure that no raptor nests will be disturbed during project implementation. A pre-construction survey shall be conducted no more than 14 days prior to the initiation of construction activities during the early part of the breeding season (January through April) or no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). During this survey, the qualified biologist shall inspect all trees in and immediately adjacent to the impact areas for raptor nests. If an active raptor nest is located within 300 feet of the project area, the ornithologist, in consultation with CDFG, shall determine the extent of a construction-free buffer zone to be established around the nest until the young have fledged.	LADWP will incorporate requirements for survey along the pipeline alignment. Compliance will be required by the construction contractor. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities.

Table B-1. Mitigation Monitoring Program

Impact	Recommended Mitigation Measures	Monitoring/ Reporting Requirement	Implementation Phase/Action
Project construction may affect aquatic life in the Los Angeles River or its tributaries.	BIO-2 During construction, the discharge rate of hydrostatic test water within or upstream of soft-bottomed segments of the Los Angeles River (specifically in the soft-bottomed segment adjacent to Griffith Park) or its tributaries, shall be compatible with the range of flows naturally occurring within the affected reach during that time of the year to avoid or reduce impacts to the aquatic environment. This measure shall be implemented to the degree possible without conflicting with any requirements imposed by the Regional Water Quality Control Board.	LADWP will incorporate hydrostatic test water discharge requirements into the project plans and specifications, and require compliance by the construction contractor. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities.
Project construction may encroach upon or require the removal of mature native and nonnative trees along the project alignment.	BIO-3 If mature trees will be directly or indirectly impacted by project construction, LADWP will comply with all Los Angeles City and Burbank City tree ordinances. A mature tree is defined as having a DBH (diameter at breast height) of 4 inches or greater.	LADWP will incorporate requirement to comply with local agency tree ordinances in the project plans and specifications, and require compliance by the construction contractor. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities.
Cultural Resources			
Excavation during project construction may uncover historical resources.	CUL-1 LADWP shall conduct spot-monitoring (the extent and duration will be dependent upon the excavation schedule) along the pipeline alignment located on and south of Burbank Boulevard during construction activities. The extent and locations for spot monitoring will be determined by a qualified historian based on review of the final excavation plan; all monitoring locations will be coordinated with the LADWP. Monitoring shall be conducted by a qualified historian.	Prior to construction, LADWP will brief construction personnel on historical resources, and map and flag monitoring locations. LADWP will provide spot-monitoring. These requirements will be described in the project plans and specifications, and compliance by the construction contractor will be required. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities.

Table B-1. Mitigation Monitoring Program

Impact	Recommended Mitigation Measures	Monitoring/ Reporting Requirement	Implementation Phase/Action
Excavation during project construction may uncover archeological resources.	CUL-2 LADWP shall conduct archaeological monitoring during ground disturbing activities along and south of Burbank Boulevard. The extent and location of monitoring will be determined by a qualified archeologist based on review of the final excavation plan; all monitoring locations will be coordinated with the LADWP. Archaeological resource monitoring locations shall be mapped and flagged prior to construction. Monitoring shall be conducted by a qualified archaeological monitor familiar with the cultural resources of southern California. In the event a potential significant archeological resource is discovered anywhere along the pipeline alignment, 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-3 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.	Prior to construction, LADWP will brief construction personnel on archeological resources, and map and flag monitoring locations. LADWP will provide archaeological monitoring during all ground disturbing activities. These requirements will be described in the project plans and specifications, and compliance by the construction contractor will be required. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities.
Excavation during project construction may uncover paleontological resources.	CUL-4 LADWP shall conduct paleontological monitoring during ground disturbing activities (excavation, trenching, boring, drilling, etc.) in the area of the Los Angeles River and the Headworks Spreading Grounds. The extent and location of monitoring will be determined by a qualified paleontologist based on review of the final excavation plan; all monitoring locations will be coordinated with the LADWP. Paleontological resource monitoring locations shall be mapped and flagged prior to construction. Monitoring shall be conducted by a qualified paleontologist familiar with paleontological resources of southern California. In the event a potentially significant paleontological specimen is uncovered, all work shall temporarily cease within the immediate area of the find until the specimen can be removed and assessed by the qualified paleontologist. If the material is determined to be significant, an adequate course of action shall be determined in consultation with the qualified paleontologist and LADWP, consistent with the Standards of Professional Paleontologists. Construction activity shall not resume until authorization has been provided by the LADWP and the qualified paleontologist. CUL-5 LADWP shall require the qualified paleontologist to provide a briefing prior to the start of construction for all construction personnel. If construction personnel discover a paleontological resource in the absence of a monitor, construction shall be halted and a qualified paleontologist shall be contacted to make an immediate evaluation of significance and recommend appropriate treatment of the resource.	Prior to construction, LADWP or its construction contractor will brief construction personnel on paleontological resources, and map and flag monitoring locations in the area of the Los Angeles River flood plain. These requirements will be described in the project plans and specifications, and compliance by the construction contractor will be required. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities.

Table B-1. Mitigation Monitoring Program

Impact	Recommended Mitigation Measures	Monitoring/ Reporting Requirement	Implementation Phase/Action
Excavation during project construction may uncover human remains.	CUL-6 In the event that human remains or potential human remains are discovered, construction activities within the immediate area of the find shall be immediately halted. The LADWP Construction Project Manager shall immediately notify the LADWP Project Manager and the County Coroner. The County Coroner will make a determination as to the origin of the remains and, if determined to be of Native American origin, the Native American Heritage Commission (NAHC) will be contacted. In consultation with the Most Likely Descendant, the NAHC and qualified archeologist shall determine the disposition of the remains in accordance with California Health and Safety Code §7050.5 and CEQA Guidelines §15064.5(e). If the remains are not of Native American origin, the County Coroner will make a determination as to the disposition of the remains. Construction may continue once compliance with all relevant sections of the California Health and Safety Code have been addressed and authorization to proceed issued by the County Coroner and the LADWP.	LADWP will incorporate notification requirements for discovery of human remains in the project plans and specifications, and compliance by the construction contractor will be required. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities.
Geology and Soils			
Ground failure, including liquefaction, differential settlement, and ground lurching could impact the proposed project where the pipeline is located within liquefiable alluvial deposits near the Los Angeles River.	GEO-1 A geotechnical investigation shall be conducted to determine areas that will be susceptible to liquefaction related phenomena. This investigation shall be conducted by a qualified professional and conform to the requirements of the City of Los Angeles. Based on the findings of this investigation, appropriate mitigation measures may be developed to reduce potential damage due to liquefaction related phenomena. Results of the geotechnical investigation will support design considerations of constructing liquefaction and ground lurching mitigation measures and/or repairing the damaged pipeline. The latter option is the standard practice for non-hazardous pipelines and typically includes consideration of economic factors.	LADWP will have a qualified professional conduct a geotechnical investigation to determine areas along the pipeline alignment that will be susceptible to liquefaction related phenomena and ground lurching, and identify measures to reduce potential damage to the pipeline.	Prior to and during construction activities.
Hazards and Hazardous Materials			
An upset or accident condition during project construction could release hazardous materials creating a significant hazard to the public or the environment.	HAZ-1 LADWP or its construction contractor shall store fuel, oil, and other hazardous materials only at designated sites. Quantities of all hazardous materials stored on-site shall be avoided or minimized, and substitution of non-hazardous materials for hazardous materials shall be implemented to the extent practicable. Each hazardous material container shall be clearly labeled with its identity, handling and safety instructions, and emergency contact. Similar information shall be clearly available and visible in the storage areas. Storage and transfer of such materials shall not be allowed within 100 feet of streams or sites known to contain sensitive biological resources except with the permission of LADWP Environmental Services personnel. Material Safety Data Sheets shall be made readily available to the Contractor's employees and other personnel at the various work sites. The accumulation and temporary storage of hazardous wastes shall not exceed 90 days. Soils contaminated by spills or cleaning wastes shall be contained and shall be removed to an approved disposal site. Disposal of hazardous wastes shall be in compliance with the applicable laws and regulations. HAZ-2 LADWP or its construction contractor shall maintain construction equipment to minimize	LADWP will include hazardous materials storage, handling, removal, and notification requirements into the project plans and specifications. Compliance by the construction contractor will be required. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities.

Table B-1. Mitigation Monitoring Program

Impact	Recommended Mitigation Measures	Monitoring/ Reporting Requirement	Implementation Phase/Action
	fuel, oil and other potentially hazardous material spills. Stationary power equipment, such as engines, pumps, generators, welders, and air compressors, shall be positioned over drip pans. HAZ-3 LADWP or its construction contractor shall store hazardous materials in containers with secondary containment. HAZ-4 Federal, state, and local notification requirements shall be followed for any release of hazardous materials that exceeds the reportable quantity. HAZ-5 LADWP or its construction contractor shall protect tanks temporarily placed for refueling from potential traffic hazards by vehicle barriers.		
Excavation during project construction may uncover hazardous materials.	HAZ-6 LADWP shall conduct environmental briefings to communicate environmental concerns and appropriate work practices, including spill prevention, emergency response measures, and implementation of proper best management practices, to all construction personnel. The briefings shall emphasize site-specific physical conditions to improve hazard prevention (e.g., identification of potentially hazardous substances and sites along the pipeline route) and shall include a review of all site-specific plans. A monitoring program shall also be implemented to ensure that the plans are followed throughout the period of construction.	LADWP will provide environmental training to all construction personnel . Compliance by the construction contractor will be required. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities.
Hydrology and Water Quality			
Hydrostatic test water would become construction waste and could potentially have a significant impact on waste discharge requirements.	WQ-1 All hydrostatic test water shall be treated for contaminants and toxic substances to meet the NPDES hydrostatic test permit before being discharged into surface waterbodies, as approved by the local Regional Water Quality Control Board or Bureau of Sanitation. All hydrostatic test water that does not meet the NPDES hydrostatic test permit requirement shall be discharged to an appropriate waste handling facility and not to surface waterbodies.	LADWP will incorporate requirements for treatment and discharge of hydrostatic test water in the project plans and specifications, and compliance by the construction contractor will be required. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities.

Table B-1. Mitigation Monitoring Program

Impact	Recommended Mitigation Measures	Monitoring/ Reporting Requirement	Implementation Phase/Action
Land Use and Planning			
Construction activities have the potential to disrupt land uses and therefore be in conflict with local land use policies.	L-1 Fifteen days prior to construction, LADWP shall inform property and business owners, schools, medical centers, and other public facilities of the location and duration of construction. Within each construction phase, notification of construction activities shall be provided by placing advertisements in local and/or community newspapers. The advertisement shall state when and where construction will occur and identify construction activities that would restrict, block, or require a detour to access existing residential properties, retail and commercial businesses, and public facilities (e.g., schools and memorial parks). The notice shall also state the type of construction activities that will be conducted, duration of construction activities, and provide LADWP contact information for public questions or concerns. If construction delays of more than 30 days occur, an additional notice shall be placed in local and/or community newspapers.	LADWP will incorporate notification requirements in the project plans and specifications. Compliance by the construction contractor will be required. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to construction activities.
Noise			
Project construction will expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	N-1 LADWP or its construction contractor shall provide advance notice, between two and four weeks prior to construction, by mail to all residents or property owners and businesses including the television and recording studios within 300 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 two weeks 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, and place signs at construction sites with construction contact information. The notices shall provide a contact person and hotline where residents or business owners can call on a 24-hour basis with questions or comments during the construction period. LADWP or its construction contractor shall promptly respond to all inquiries regarding construction noise and vibration. On-site measurements may be needed to determine if noise or vibration levels are significantly above expected levels. Notices and construction signs will include a website address, which will be updated quarterly and where interested parties can obtain construction and project-related information.	LADWP will incorporate notification requirements in the project plans and specifications. Compliance by the construction contractor will be required. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities.
Refer to N-1.	N-2 All machinery to be used on-site shall be equipped with the best available exhaust mufflers and any applicable "hush kits." No machinery shall be allowed on-site which emits noise levels in excess of 75 dBA when measured at a distance of 50 feet from the machine, unless technically infeasible due to the nature of the machine or its operation. LADWP or its contractor shall substitute quieter machinery, wherever feasible. N-3 All machinery shall be maintained in good working order and lubricated as necessary to minimize unnecessary squeals, groans, and other noise. All cabinets, panels, covers, shrouds, and similar components shall be securely fastened to ensure that they do not create excessive noise due to vibration.	LADWP will incorporate requirements for noise-reducing features and noise limits for construction equipment in the project plans and specifications. Compliance by the construction contractor will be required. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance	Prior to and during construction activities.

Table B-1. Mitigation Monitoring Program

Impact	Recommended Mitigation Measures	Monitoring/ Reporting Requirement	Implementation Phase/Action
		oversight.	
Refer to N-1.	N-4 LADWP or its construction contractor shall turn off all unnecessary machinery. Delivery and hauling trucks shall not sit with their engines idling for periods exceeding 5 minutes. The contractor shall post signs advising drivers to turn off idling engines. N-5 LADWP or its construction contractor shall erect temporary noise-barriers to shield nearby residences and other sensitive receptors or land uses from direct exposure to airborne construction noise. These barriers shall be erected to reduce construction noise levels to 70 dBA or below and to maintain one-hour average noise levels below 75 dBA at any sensitive receptor or land use. The *RSCI Upper Reach Noise and Vibration Study* (Appendix C) includes recommendations for achieving these noise levels. For example, barriers shall consist of commercially available noise-control curtains, in-situ fabricated sound walls, or equivalent barrier with an overall sound-transmission class rating of STC-28 or higher. All barriers shall be constructed to contain no unnecessary holes or gaps. Where access through the barrier is required, overlapping sections shall be constructed to prevent noise escaping through the opening. The most appropriate barrier shall be determined specific to each situation. N-6 The use of noise producing signals, including horns, whistles, alarms, and bells shall be for safety warning purposes only.	LADWP will incorporate limitations on idling and use of noise producing signals during construction in the project plans and specifications. The use of temporary noise barriers will also be incorporated, and compliance by the construction contractor will be required. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities.
Refer to N-1.	N-7 LADWP or its construction contractor shall perform noisy work off-site and away from any residential areas wherever feasible. Such off-site activities may include rock-crushing, materials pre-fabrication, and equipment maintenance. N-8 All trucking shall be constrained to major roadways (e.g., Lankershim Boulevard, Burbank Boulevard), to the extent feasible, to limit use of residential side streets. The contractor shall establish designated truck routes to serve each project area. All subcontractors shall also be required to adhere to the designated truck routes. N-9 LADWP or its construction contractor shall restrict deliveries to those hours permitted by the City of Los Angeles and City of Burbank. Staging areas in the vicinity of sensitive receptors and land uses receivers shall be locked after hours, and shall have signs prominently displaying operating hours. N-10 LADWP or its construction contractor shall instruct all personnel, including subcontractor personnel, of the necessity for, and methods of, controlling noise and vibration impacts on sensitive receptors and land uses. Instruction should shall occur before the start of construction. LADWP shall provide instruction on the necessity for controlling noise and vibration impacts to contractor at project kick-off meeting and advise the contractor to provide updates at monthly construction meetings. Contractor shall be responsible for instruction to on-site personnel.	LADPW will incorporate the requirements for truck routes and address noisy work in the project plans and specifications. LADWP will brief construction personnel on the measures necessary to ensure reduced noise and vibration levels. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities.

Table B-1. Mitigation Monitoring Program

Impact	Recommended Mitigation Measures	Monitoring/ Reporting Requirement	Implementation Phase/Action
Project construction would expose persons to or generate excessive groundborne vibration or groundborne noise levels.	N-11 LADWP or its construction contractor shall monitor noise and vibration under the guidance of an independent qualified acoustical consultant along the project alignment to ensure the measures described in N-1 through N-10 are effectively reducing noise levels. Monitoring shall be conducted quarterly and documented. Monitoring shall include additional spot-checks of the noise and vibration levels near sensitive receptors/land uses including the television and recording studios and any additional measurements to resolve issues reported as part of the 24-hour hotline required as part of Mitigation Measure N-1. LADWP, under the guidance of the acoustical consultant, shall have the authority to cease any construction activity which significantly exceeds noise thresholds or is causing substantial disturbance to sensitive receptors or land use (as determined by the number of concerns received at a specific location) until additional noise or vibration-reducing measures are implemented. The qualified acoustical consultant will prepare a construction noise and vibration plan that documents monitoring events, monitoring thresholds, and incorporates other noise and vibration mitigation measures identified in the EIR. N-12 LADWP or its construction contractor shall take all reasonable measures necessary to maintain ground-vibration levels below a peak-particle velocity of 0.02 inches per second (72VdB) at any sensitive receptor or land use as verified during periodic monitoring by a qualified acoustical consultant required as part of Mitigation Measure N-11. Such measures may include any of the following: • Adjust the speed of the TBM cutting wheel (it is possible that the rotational speed of the cutting wheel may coincide with natural frequencies of nearby structures, thus amplifying the induced vibration; increasing or decreasing the wheel speed would likely reduce this impact). • Use alternate TBM cutting surfaces (different cutting surfaces, if available, may induce varying levels of vibration into the soil, particularly with regard to soil composition and condition). • Minimize the undulations and roughness of muck-train tracks (a muck car which rolls smoothly over its tracks will induce less vibration into the surrounding soils). • Minimize the number of junctions in the muck-train tracks (previous experience indicates that muck-train vibration impacts are greatest near junctions in the tracks, where disjoints are likely to occur in the rails). • Minimize gaps between adjoining rails. • Mount muck-train tracks on resilient pads or springs. • Maintain roundness of muck-train wheels. • Lessen the load of the muck-trains (lightly-loaded cars will induce less vibration into surrounding soils than heavily-laden cars). N-13 No less than 60 days prior to construction, LADWP or its construction contractor shall identify historic and fragile buildings within 200 feet of the tunneling portions of the alignment. Buildings shall be identified in the field and, as necessary, a building inspector or architectural historian may be needed to support the identification of these buildings. If buildings are identified that are in poor condition and therefore may be adversely affected by ground vibration, or buildings are considered historical based on local, state, or federal designations, then additional information shall be documented on those buildings through an exterior evaluation of the	LADWP will brief construction personnel on the measures necessary to ensure reduced vibration and noise levels. LADWP will provide monitoring by a qualified acoustical consultant. These requirements will be described in the project plans and specifications, and compliance by the construction contractor will be required. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities.

Table B-1. Mitigation Monitoring Program

Impact	Recommended Mitigation Measures	Monitoring/ Reporting Requirement	Implementation Phase/Action
	condition of the buildings and photo documentation. The purpose of this focused survey is to document the current condition of older buildings along the tunneling portion of the alignment, if any, prior to the start of construction and to assess whether there is any change in the conditions of the buildings during or after construction. If there is reason to believe that a structure may be potentially damaged during project construction, then LADWP in conjunction with its construction contractor will determine if there are measures that can be taken to reduce vibration impacts to the building or structure.		
Recreation			
Construction would directly and/or indirectly disrupt access to or activities within established recreational areas and would result in the degradation of park facilities.	R-1 No less than 60 days prior to construction, LADWP shall coordinate construction activities and the project construction schedule with the City of Burbank, Department of Parks and Recreation and City of Los Angeles, Department of Parks and Recreation regarding the use of a portion of Johnny Carson Park as a construction staging area. This coordination shall include consideration of heavy recreational use periods, including major holidays, in construction scheduling, and providing construction notification at park facilities and offices. The notice shall also identify alternate park facilities. In addition, coordination shall include discussion of the schedule and planning for restoration of the affected park area (vegetation and infrastructure including irrigation systems and park amenities) after construction.	Requirements identified through coordination among agencies will be incorporated into the project, and compliance by the construction contractor will be required. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities.
Transportation and Traffic			
Construction activities and the installation of the water line within, adjacent to, or across a roadway would reduce the number of, or the available width of, one or more travel lanes during the peak traffic periods, resulting in a temporary disruption to traffic flow and/or increased traffic congestion. In addition, a major roadway (arterial or collector classification) would be closed to through traffic as a result of construction activities and there would be no suitable alternative route available.	T-1 Prior to the start of construction, LADWP shall submit a Construction Traffic Management Plan to the Los Angeles Department of Transportation and City of Burbank for review and approval prior to the start of any construction work. The plan shall show the location of roadway or lane closures, traffic detours, haul routes, hours of operation, and local access (maintenance of), including bike lanes if applicable. The Plan shall also discuss the use of flag persons, warning signs, lights, barricades, cones, etc. according to standard guidelines outlined in the Caltrans Traffic Manual, the Standard Specifications for Public Works Construction, and the Work Area Traffic Control Handbook (WATCH). T-2 Pending approval from the Los Angeles Department of Transportation, the LADWP or its construction contractor shall implement the following roadway measures during construction: Lankershim Boulevard. Three travel lanes shall be provided during the construction period - two travel lanes in the peak direction of travel. For pit/shaft construction at the Lankershim Boulevard and Hart Street intersection, two lanes of travel may not be possible for the peak travel time/direction (southbound in the a.m. peak period). In order to avoid significant traffic impacts, a recommended alternate route (not a full detour route) shall be established and signed for southbound traffic on Lankershim Boulevard. This route shall utilize eastbound Sherman Way, southbound Tujunga Avenue, and westbound Hart Street. Burbank Boulevard. LADWP shall provide narrower rectangular working areas for jacking pit and shaft operations, where feasible, to provide for two travel lanes along the narrower portions of	LADWP will incorporate the requirements of the Construction Traffic Management Plan and roadway measures in the project plans and specifications, and require compliance by the construction contractor. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities.

Table B-1. Mitigation Monitoring Program

Impact	Recommended Mitigation Measures	Monitoring/ Reporting Requirement	Implementation Phase/Action
	Burbank Boulevard. Work area width shall be reduced to 25 to 30 feet to allow for two 10-foot temporary travel lanes. Forest Lawn Drive. Directional capacity (westbound in the a.m. peak and eastbound in the p.m. peak) shall be considered in roadway closure planning. The provision of two travel lanes in the peak direction, while providing one travel lane for the opposite direction of traffic flow, shall be provided. This peak provision may not be possible within the vicinity of the pit/shaft work areas. T-3 At the egress point on the eastern side of the Johnny Carson Park staging area site, flag persons shall be provided for truck movements from the site to the SR-134 eastbound on-ramp. T-4 So that delays are not significant for motorists on Bob Hope Drive and Riverside Drive, flag persons shall limit truck movements into and out of the site to one or two trucks at a time. Inbound truck movements shall be scheduled to allow this management to be effective, and outbound truck movements should be held if necessary.		
Construction activities would restrict access to or from adjacent land uses and there would be no suitable alternative access.	T-5 LADWP shall provide a minimum of 48-hour advance notification of the potential for disrupted access to and parking for any business, residence, or recreational facility that may experience delayed access or reduced parking capacity in the vicinity. The notification shall include information on restoring access and the estimated amount of time that access may be blocked. T-6 If vehicular access to businesses, residences, and recreational facilities cannot be restored within eight (8) hours, LADWP or its construction contractor shall provide a one lane temporary vehicular bridge for access (LADWP Specification F01560 - Project Controls, Section 3.07D). T-7 The westbound left turn lane into the Forest Lawn cemetery shall be maintained during proposed project construction, as well as the right turn access into the cemetery from the eastbound curb lane.	LADWP will incorporate noticing and access requirements in the project plans and specifications. Compliance by the construction contractor will be required. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities.
Construction activities could restrict the movements of emergency vehicles (police cars, fire trucks, ambulances, and paramedic units) and there would be no reasonable alternative access routes available.	T-8 LADWP shall coordinate in advance with emergency service providers to avoid restricting movements of emergency vehicles. Police departments, fire departments, ambulance services, and paramedic services shall be notified in advance by LADWP of the proposed locations, nature, timing, and duration of any construction activities and advised of any access restrictions that could impact their effectiveness. At locations where access to nearby property is blocked, provision shall be ready at all times to accommodate emergency vehicles, such as plating over excavations, short detours, and alternate routes in conjunction with local agencies. The Traffic Construction Management Plan (T-1) shall include details regarding emergency services coordination and procedures.	LADWP will prepare a Construction Traffic Management Plan, which will address coordination with emergency service providers. Plan requirements will be incorporated in the project plans and specifications, and compliance by the construction contractor will be required. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities.

Table B-1. Mitigation Monitoring Program

Impact	Recommended Mitigation Measures	Monitoring/ Reporting Requirement	Implementation Phase/Action
Construction activities will disrupt public transit service and there would be no suitable alternative routes or stops.	T-9 LADWP shall coordinate in advance with City of Los Angeles Department of Transportation (LADOT), City of Burbank and Metropolitan Transportation Authority (Metro) to avoid restricting movements of public transportation. Notification shall include proposed locations, nature, timing, and duration of any construction activities and any access restrictions that could impact existing bus stops and service routes. The Traffic Construction Management Plan (Mitigation Measure T 1) shall include details regarding public transportation coordination and procedures. Copies of the plan shall be provided to the LADOT, City of Burbank, and Metro.	LADWP will prepare a Construction Traffic Management Plan. Plan requirements will be incorporated in the project plans and specifications, and compliance by the construction contractor will be required. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities.
Construction activities of the project would result in safety problems for vehicular traffic, pedestrians, transit operations, or trains.	T-10 LADWP shall ensure bicycle route closure signs are posted at major intersections to the west and east of the construction area (Griffith Park area and Barham Boulevard).	LADWP will prepare a Construction Traffic Management Plan, which will address bicycle route closure signs. Plan requirements will be incorporated in the project plans and specifications, and compliance by the construction contractor will be required. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities.
Other Identified Measures			
	O-1 LADWP shall prepare a memorial park Construction Management Plan to mitigate impacts related to funeral processions leading into the Forest Lawn Memorial Park and Mount Sinai Memorial Park, and to ensure visitors to the memorial parks have reasonable access to the site during operating hours. The plan shall be prepared to include all Final EIR mitigation measures that apply to the memorial parks, such as T-7, and include the following measures: – Meeting Prior to Start of Construction – Limit Visibility of Equipment – Construction Personnel Contact Information – Construction Vehicle Parking – Advance Notification to Forest Lawn and Notification from Forest Lawn to LADWP – No Construction on Holidays or Sundays – Priority for Funeral Processions	LADWP will prepare a Construction Management Plan for the memorial parks. Plan requirements will be incorporated in the project plans and specifications, and compliance by the construction contractor will be required. Project Construction Manager will be responsible for implementation, and LADWP Environmental Services Division will provide compliance oversight.	Prior to and during construction activities