Mitigated Negative Declaration

Reseda Boulevard Pipeline Project

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

February 2014

CEQA Initial Study and Mitigated Negative Declaration

Reseda Boulevard Pipeline Project

February 2014

Manager of Environmental Planning and Assessment
Charles C. Holloway

Environmental Project Manager
David Porter

Prepared by
Los Angeles Department of Water and Power
111 North Hope Street
Los Angeles, CA 90012

Technical Assistance Provided by
AECOM
515 S. Flower Street, 9th Floor
Los Angeles, CA 90071

Table of Contents

TECHNICAL APPENDICES

List of Figures

List of Tables

Acronyms and Abbreviations

AQMP	Air Quality Management Plan
BMP	Best Management Practice
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CH_4	Methane
CMP	Congestion Management Program
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
dBA	A-weighted decibel
DTSC	Department of Toxic Substances Control
ERDIP	Earthquake resistant ductile iron pipe
GHG	Greenhouse gas emissions
I-405	Interstate 405 (Santa Monica Freeway)
LADOT	City of Los Angeles Department of Transportation
LADWP	Los Angeles Department of Water and Power
LAFD	Los Angeles Fire Department
LAPD	Los Angeles Police Department
L_{eq}	Energy equivalent sound level
LOS	Level of service
MND	Mitigated Negative Declaration
N_2O	Nitrous oxide
NO_2	Nitrogen dioxide
NO_x	Nitrogen oxide
O_3	Ozone
Pb	Lead
$PM_{2.5}$	Particulate matter less than 2.5 microns in diameter
PM_{10}	Particulate matter 10 microns in diameter or less
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SO_x	Sulfur oxide
SWPPP	Storm Water Pollution Prevention Plan
TAC	Toxic air contaminant
TMP	Traffic Management Plan
US 101	United States Route 101, Ventura Freeway
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
V/C	Volume-to-capacity

Page intentionally left blank

SECTION 1
PROJECT DESCRIPTION

1.1 Overview of the Project

The Los Angeles Department of Water and Power (LADWP) proposes to replace an existing public water distribution main in portions of Roscoe Boulevard, Reseda Boulevard, Etiwanda Avenue, Cantara Street, and Strathern Street with earthquake resistant ductile iron pipe (ERDIP) near the Northridge Hospital Medical Center. The Reseda Boulevard Pipeline Project (proposed project) is part of LADWP's long-term seismic improvement program for the water system. The existing water distribution main is in need of replacement due to the age of the pipe. ERDIP is proposed to be used because the area experienced substantial ground failures during the 1994 Northridge Earthquake, and the need to maintain system reliability and continued service to the Northridge Hospital Medical Center.

1.2 California Environmental Quality Act

The California Environmental Quality Act (CEQA) applies to projects initiated by, funded by, or requiring discretionary approvals from state or local government agencies. The proposed Reseda Boulevard Pipeline Project constitutes a project as defined by CEQA (California Public Resources Code Section 21000 et seq.). The CEQA Guidelines Section 15367 states that a "Lead Agency" is "the public agency which has the principal responsibility for carrying out or approving a project." Therefore, LADWP is the lead agency responsible for compliance with CEQA for the proposed project.

As lead agency for the project, LADWP must complete an environmental review to determine if implementation of the proposed project would result in significant adverse environmental impacts. To fulfill the purpose of CEQA, an Initial Study has been prepared to assist in making that determination. Based on the nature and scope of the proposed project and the evaluation contained in the Initial Study environmental checklist (contained herein), LADWP, as the lead agency, has concluded that a Mitigated Negative Declaration (MND) is the proper level of environmental documentation for this project. The Initial Study shows that impacts caused by the proposed project are either less than significant or significant but mitigable with incorporation of appropriate mitigation measures as defined herein. This conclusion is supported by CEQA Guidelines Section 15070, which states that an MND can be prepared when "(a) the initial study shows that there is not substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, or (b) the initial study identifies potentially significant effects, but (1) revisions in the project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur; and (2) there is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment."

1.3 Project Location and Setting

The proposed replacement of water distribution main would be located in consecutive segments entirely within the public street rights-of-way in urbanized and fully developed areas in the community of Reseda-West Van Nuys, immediately adjacent to the community

of Northridge in the City of Los Angeles. Figure 1 shows the regional location of the proposed project, while Figure 2 shows the proposed pipeline alignments. More specifically, the proposed project would replace public water distribution mains in the following locations:

- Roscoe Boulevard from Reseda Boulevard to east of Reseda Boulevard;
- Reseda Boulevard from Roscoe Boulevard to Strathern Street;
- Cantara Street from Reseda Boulevard to Etiwanda Avenue;
- Etiwanda Avenue from Roscoe Boulevard to Strathern Street; and
- Strathern Street from Reseda Boulevard to Etiwanda Avenue.

1.4 Project Background and Objectives

The proposed project is part of LADWP's long-term seismic improvement program for the water system. This is a demonstration project and would be the second application of ERDIP in the City of Los Angeles. This project was selected because it reinforces the water distribution network around Northridge Hospital Medical Center, which due to its age is scheduled to be replaced. Further, the project area was subject to substantial ground failures during the 1994 Northridge Earthquake. LADWP intends to use the ERDIP that is produced by Kubota Corporation (Kubota) for its earthquake resistant properties and for its extensive history of successful use in the seismic regions of Japan.

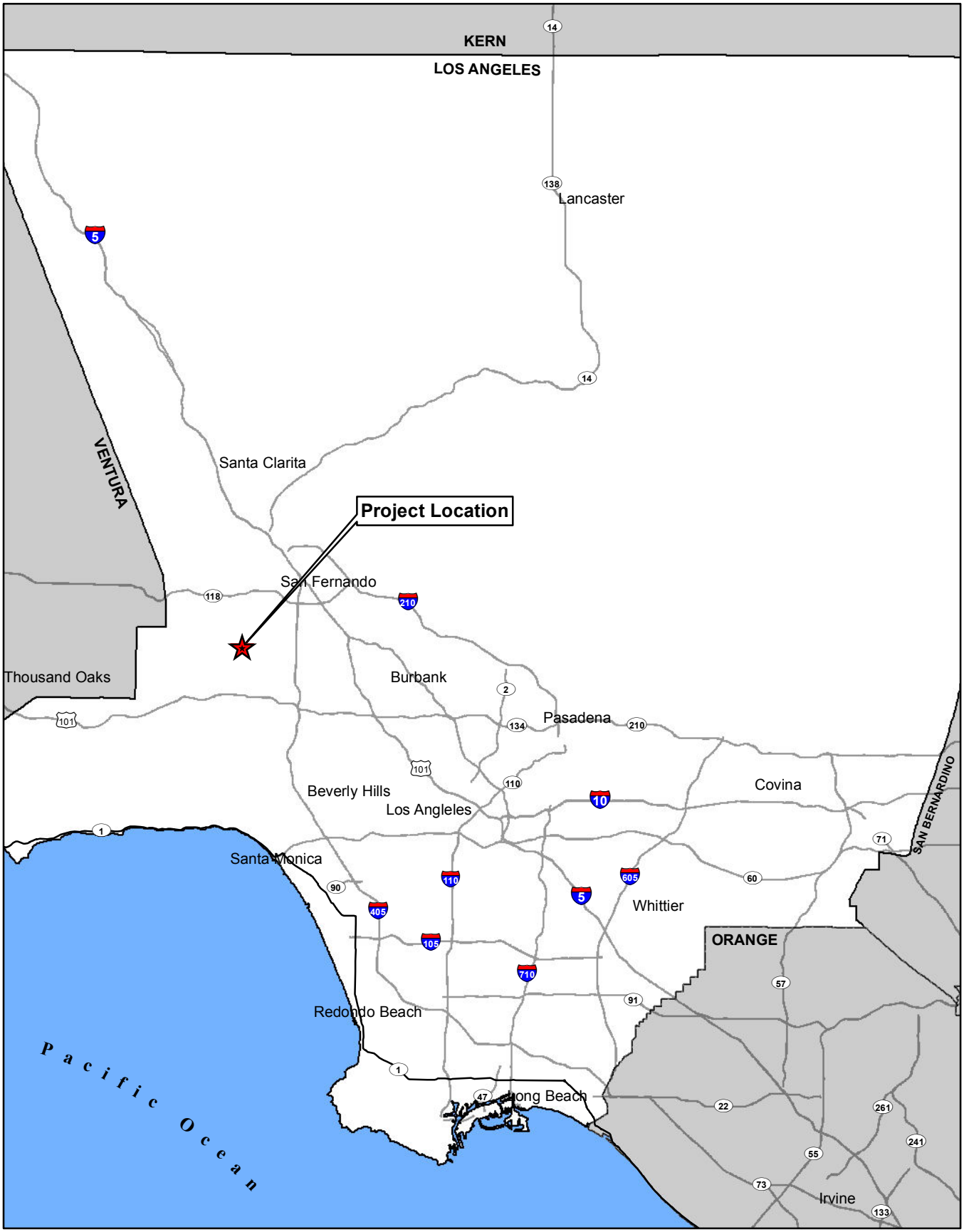
The objective of the proposed project is to maintain system reliability and service to the project area by replacing an aging water distribution pipeline with earthquake resistant piping.

1.5 Description of the Proposed Project

The proposed project includes the following public water distribution main replacements:

- 166 feet of 12-inch pipe on the south side of Roscoe Boulevard from Reseda Boulevard to east of Reseda Boulevard;
- 1,822 feet of 12-inch pipe on the east side of Reseda Boulevard from Roscoe Boulevard to Strathern Street;
- 1,335 feet of 8-inch pipe on the south side of Cantara Street from Reseda Boulevard to Etiwanda Avenue;
- 1,872 feet of 8-inch pipe on the east side of Etiwanda Avenue from Roscoe Boulevard to Cantara Street and on the west side of Etiwanda Avenue from Cantara Street to Strathern Street; and
- 1,278 feet of 8-inch pipe on the south side of Strathern Street from Reseda Boulevard to Etiwanda Avenue.

Installation of the ERDIP would occur within public roads and using a cut and cover trenching technique. An approximately 2.5-foot wide by 5-foot deep trench in proximity to the existing water distribution main would be excavated within the roadway that could be covered with metal plates during periods of the day when construction is not on-going. Once the pipe has been installed within a segment, the trench would be backfilled with imported



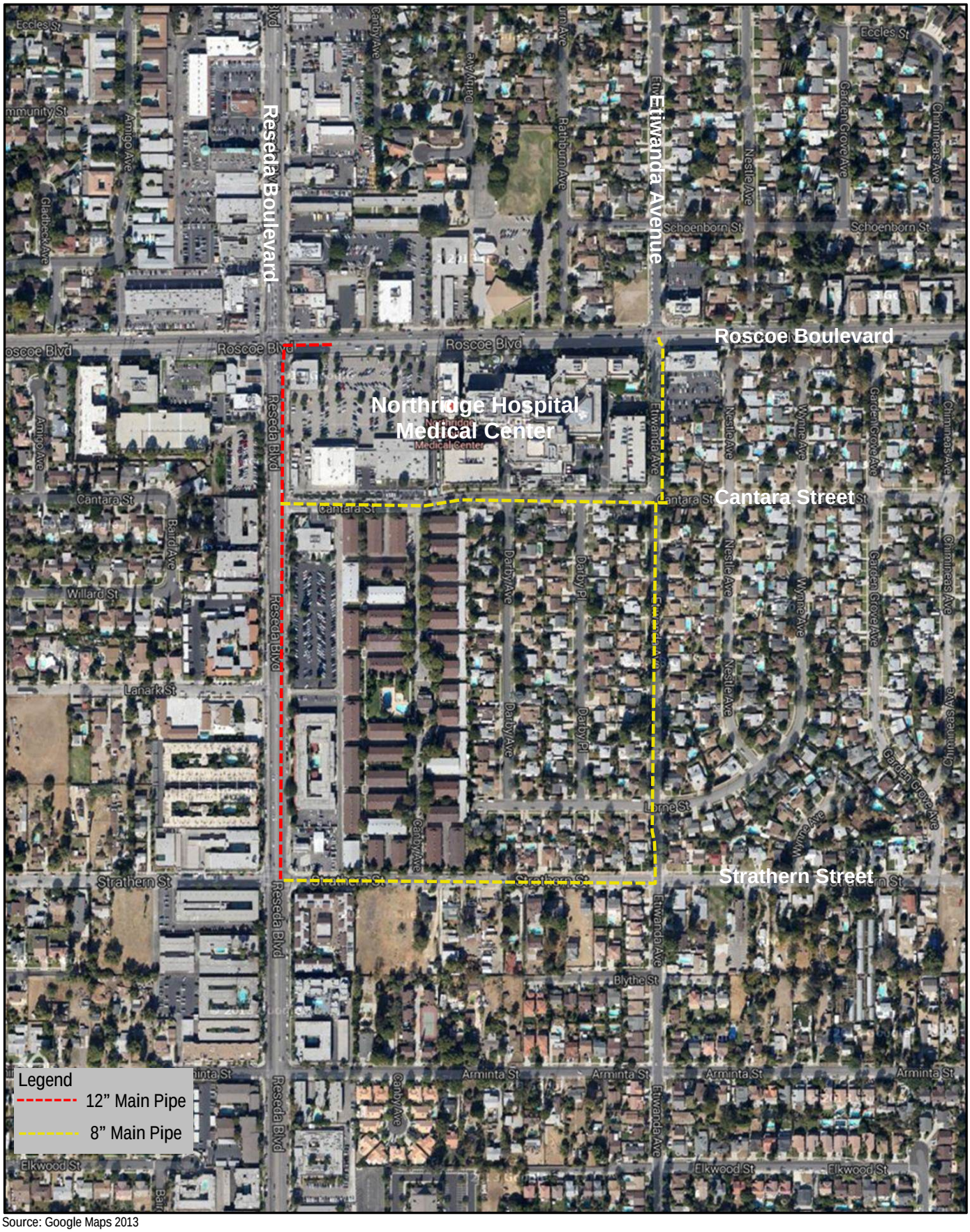
Source: ESRI 2012 Imagery

N

0 5 10 15 20 Miles

Figure 1
Regional Location Map

Reseda Boulevard Pipeline Project



Source: Google Maps 2013

N

100 200 400 Feet

Figure 2
Project Location Map

Reseda Boulevard Pipeline Project

slurry and returned to its original condition. Excess soil that cannot be reused as backfill material would be disposed of at an appropriate regional landfill. Pipeline installation would necessitate restrictions of on-street parking and closure of up to two lanes of the roadway depending on the location of construction. In general, approximately 25 linear feet of pipeline would be installed per day.

Construction staging would occur at the LADWP yard at 18144 Devonshire St, Los Angeles, CA 91325 near Devonshire Street and Etiwanda Avenue.

Once in service, the old water distribution mains would be abandoned in place. No permanent above-ground structures would be constructed, and there would be no operational component beyond existing maintenance activities.

1.6 Construction Schedule and Procedures

Construction of the proposed project is anticipated to begin in fall 2014 and take approximately one year to complete, concluding in late 2015.

Generally, in accordance with the City of Los Angeles Noise Ordinance (the Noise Ordinance), construction activity would occur Mondays through Fridays from 7:00 a.m. to approximately 3:30 p.m.

The City of Los Angeles Mayor's Directive #2 prohibits construction on major roads during rush hour periods (6:00 a.m. to 9:00 a.m. and 3:30 p.m. to 7:00 p.m.). However, due to the nature of construction activities within public roadways, construction activity could occur during rush hour periods. Therefore, LADWP would request a variance to Directive #2. Construction would also be coordinated with the City of Los Angeles Department of Transportation (LADOT) to minimize traffic disturbances.

A spreadsheet that reflects the level of construction activities by segment installed is included as Appendix A of this document.

An appropriate combination of monitoring and resource impact avoidance would be employed during all phases of the proposed project, including implementation of the following Best Management Practices (BMPs):

- The proposed project would implement Rule 403 dust control measures required by the South Coast Air Quality Management District (SCAQMD), which would include the following:
    1) Water shall be applied to exposed surfaces at least two times per day to prevent generation of dust plumes.
    2) The construction contractor shall utilize at least one of the following measures at each vehicle egress from the project site to a paved public road:
        a. Install a pad consisting of washed gravel maintained in clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long;
        b. Pave the surface extending at least 100 feet and at least 20 feet wide;

c. Utilize a wheel shaker/wheel spreading device consisting of raised dividers at least 24 feet long and 10 feet wide to remove bulk material from tires and vehicle undercarriages; or

d. Install a wheel washing system to remove bulk material from tires and vehicle undercarriages.

3) All haul trucks hauling soil, sand, and other loose materials shall be covered (e.g., with tarps or other enclosures that would reduce fugitive dust emissions).

4) Construction activity on exposed or unpaved dirt surfaces shall be suspended when wind speed exceeds 25 miles per hour.

5) Ground cover in disturbed areas shall be replaced in a timely fashion when work is completed in the area.

6) A community liaison shall be identified concerning on-site construction activity including resolution of issues related to PM_{10} generation.

7) Non-toxic soil stabilizers shall be applied according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for ten days or more).

8) Traffic speeds on all unpaved roads shall be limited to 15 mph or less.

9) Streets shall be swept at the end of the day if visible soil is carried onto adjacent public paved roads. If feasible, water sweepers with reclaimed water shall be used.

- The construction contractor would develop and implement an erosion control plan and Storm Water Pollution Prevention Plan (SWPPP) for construction activities. Erosion control and grading plans may include, but would not be limited to, the following:
    - Minimizing the extent of disturbed areas and duration of exposure;
    - Stabilizing and protecting disturbed areas;
    - Keeping runoff velocities low; and
    - Retaining sediment within the construction area.
    - Construction erosion control BMPs may include the following:
        - Temporary desilting basins;
        - Silt fences;
        - Gravel bag barriers;
        - Temporary soil stabilization with mattresses and mulching;
        - Temporary drainage inlet protection; and
        - Diversion dikes and interceptor swales.

- The proposed project would comply with the Regional Water Quality Control Board's National Pollution Discharge Elimination System Phase II Rule.

- Residences and businesses along the alignment would be notified prior to the start of construction (e.g., via flyers) of lane closures and parking restrictions in their vicinity. The notices would include a telephone number for comments or questions related to construction activities.

- The proposed project construction would incorporate source reduction techniques and recycling measures and maintain a recycling program to divert waste in accordance with the Citywide Construction and Demolition Debris Recycling Ordinance.

1.7 Required Permits and Approvals

Numerous approvals and/or permits would be required to implement the proposed project. The environmental documentation for the project would be used to facilitate compliance with federal and state laws and the granting of permits by various state and local agencies having jurisdiction over one or more aspects of the project. These approvals and permits may include, but may not be limited, to the following:

City of Los Angeles Department of Water and Power

- Certification by the City of Los Angeles Board of Water and Power Commissioners that the MND was prepared in accordance with CEQA and other applicable codes and guidelines
- Approval by the City of Los Angeles Board of Water and Power Commissioners of the proposed project

City of Los Angeles Department of Public Works, Bureau of Engineering

- Excavation Permit
- Grading Permit

City of Los Angeles Department of Transportation

- Approval of Traffic Management Plan
- Approval of temporary road closures

State of California, Los Angeles Regional Water Quality Control Board

- National Pollution Discharge Elimination System Permit for construction dewatering and hydrostatic test water discharge

Page intentionally left blank

SECTION 2
INITIAL STUDY CHECKLIST

The following discussion of potential environmental effects was completed in accordance with Section 15063(d)(3) of the CEQA Guidelines (2013) to determine if the proposed project may have a significant effect on the environment.

CEQA INITIAL STUDY FORM

Project Title:
Reseda Boulevard Pipeline Project

Lead Agency Name and Address:
Los Angeles Department of Water and Power
Environmental Planning and Assessment
111 North Hope Street, Room 1044
Los Angeles, CA 90012

Contact Person and Phone Number:
David Porter
Environmental Planning and Assessment
Los Angeles Department of Water and Power
(213) 367-0706

Project Sponsor's Name and Address:
Los Angeles Department of Water and Power
Water Distribution
111 North Hope Street, Room 1425
Los Angeles, CA 90012

Project Location:
The project area is located in the San Fernando Valley area of Los Angeles in the Reseda-West Van Nuys community.

City Council District:
District 12

Neighborhood Council District:
Reseda Neighborhood Council

General Plan Designation:
The proposed project would be located entirely within existing roadway rights-of-way. The properties adjacent to the proposed alignment include the following designations: Low Residential, Low Medium Residential, Low Medium II Residential, Medium Residential, Community Commercial, Neighborhood and Office Commercial, Neighborhood Commercial, Limited Neighborhood Commercial, and General Commercial.

Zoning:
The properties along the proposed alignment are zoned C1 (Limited Commercial), C2 (Regional Commercial), RA and RS (Suburban), R1 (One Family Residential), RD1 and RD2 (Restricted Density Multiple Dwelling), R3 and R4 (Multiple Dwelling Residential), and P (Automobile Parking – Surface and Underground).

Description of Project:
The proposed project includes the following public water distribution main replacements:

- 166 feet of 12-inch pipe on the south side of Roscoe Boulevard from Reseda Boulevard to east of Reseda Boulevard;
- 1,822 feet of 12-inch pipe on the east side of Reseda Boulevard from Roscoe Boulevard to Strathern Street;
- 1,335 feet of 8-inch pipe on the south side of Cantara Street from Reseda Boulevard to Etiwanda Avenue;
- 1,872 feet of 8-inch pipe on the east side of Etiwanda Avenue from Roscoe Boulevard to Cantara Street and on the west side of Etiwanda Avenue from Cantara Street to Strathern Street; and
- 1,278 feet of 8-inch pipe on the south side of Strathern Street from Reseda Boulevard to Etiwanda Avenue.

Construction of the proposed project is anticipated to begin in fall 2014 and take approximately one year to complete, concluding in late 2015. Generally, in accordance with the City of Los Angeles Noise Ordinance (the Noise Ordinance), construction activity would occur Mondays through Fridays from 7:00 a.m. to approximately 3:30 p.m. Installation of the ERDIP would occur within public roads and using a cut and cover trenching technique. An approximately 2.5-foot wide by 5-foot deep trench in proximity to the existing water distribution mains would be excavated within the roadway that could be covered with metal plates during periods of the day when construction is not on-going. Once the pipe has been installed within a segment, the trench would be backfilled with imported slurry and returned to its original condition. Excess soil that cannot be reused as backfill material would be disposed of at an appropriate regional landfill. Pipeline installation would necessitate restrictions of on-street parking and closure of up to two lanes of the roadway depending on the location of construction. In general, approximately 25 linear feet of pipeline would be installed per day.

Surrounding Land Uses and Setting:
The proposed project would be located entirely within public roadway rights-of-way in the San Fernando Valley, specifically including a very short segment of Roscoe Boulevard immediately east of Reseda Boulevard, Reseda Boulevard, Strathern Street, Etiwanda Avenue, and Cantara Street. The proposed project alignment is encompassed entirely within the community of Reseda-West Van Nuys, immediately adjacent to the community of Northridge. As shown in Figure 3, the proposed alignment abuts primarily residential uses along Reseda Boulevard, Etiwanda Avenue, Strathern Street, and the south side of Cantara Street. Northridge Hospital Medical Center occupies the entire block bounded by Roscoe Boulevard on the north, Cantara Street on the south, Etiwanda Avenue on the east, and Reseda Boulevard on the west. There are some commercial and other medical-related uses on Roscoe Boulevard near the intersection of Reseda Boulevard and Etiwanda Avenue, a gas station at the northeast corner of Reseda Boulevard and

Source: Google Maps 2013

Figure 3
Surrounding Land Uses

Strathern Street, and the Northridge Hospital Children's Center at the southeast corner of Reseda Boulevard and Cantara Street.

Responsible/Trustee Agencies:

- State of California, Los Angeles Regional Water Quality Control Board
- State of California Department of Transportation
- Los Angeles Metropolitan Transportation Authority

Reviewing Agencies:

- City of Los Angeles Department of Transportation
- City of Los Angeles Department of Public Works, Bureau of Engineering
- City of Los Angeles Department of Public Works, Bureau of Sanitation, Stormwater Management Division

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the Environmental Impacts discussion in Section 3.

☐ Aesthetics	☐ Agriculture Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Hazards & 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	

DETERMINATION

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 in the project have been made by or agreed to by the project proponent. 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 is required.

☐ I find that the proposed project may have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the 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 proposed project, nothing further is required.

Charles C. Holloway — 2/10/2014

Signature — Date

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

		Potentially Significant Impact	Less Than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
I.	**AESTHETICS**. Would the project:				
a.	Have a substantial adverse effect on a scenic vista?				**X**
b.	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				**X**
c.	Substantially degrade the existing visual character or quality of the site and its surroundings?				**X**
d.	Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?				**X**
II.	**AGRICULTURE AND FORESTRY 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 agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a.	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				**X**
b.	Conflict with existing zoning for agricultural use, or a Williamson act contract?				**X**
c.	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				**X**
d.	Result in the loss of forest land or conversion of forest land to non-forest use?				**X**
e.	Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				**X**

		Potentially Significant Impact	Less Than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
III.	**AIR QUALITY**. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a.	Conflict with or obstruct implementation of the applicable air quality plan?			**X**	
b.	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			**X**	
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)?			**X**	
d.	Expose sensitive receptors to substantial pollutant concentrations?			**X**	
e.	Create objectionable odors affecting a substantial number of people?			**X**	
IV.	**BIOLOGICAL RESOURCES**. Would the project:				
a.	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				**X**
b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				**X**
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.) through direct removal, filling, hydrological interruption, or other means?				**X**
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 native wildlife nursery sites?				**X**
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				**X**
f.	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				**X**

		Potentially Significant Impact	Less Than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
V.	**CULTURAL RESOURCES**. Would the project:				
a.	Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5?			**X**	
b.	Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?			**X**	
c.	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			**X**	
d.	Disturb any human remains, including those interred outside of formal cemeteries?			**X**	
VI.	**GEOLOGY AND SOILS**. Would the project:				
a.	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			**X**	
	ii) Strong seismic ground shaking?			**X**	
	iii) Seismic-related ground failure, including liquefaction?			**X**	
	iv) Landslides?				**X**
b.	Result in substantial soil erosion, loss of topsoil, or changes in topography or unstable soil conditions from excavation, grading, or fill?			**X**	
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?			**X**	
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?			**X**	
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?				**X**
VII.	**GREENHOUSE GAS EMISSIONS**: Would the project:				
a.	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impacts on the environment?			**X**	
b.	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				**X**

		Potentially Significant Impact	Less Than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII.	**HAZARDS AND HAZARDOUS MATERIALS**: Would the project:				
a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			**X**	
b.	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?				**X**
c.	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			**X**	
d.	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?			**X**	
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?				**X**
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?				**X**
g.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			**X**	
h.	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?				**X**
IX.	**HYDROLOGY AND WATER QUALITY**. Would the project:				
a.	Violate any water quality standards or waste discharge requirements?			**X**	
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)?			**X**	
c.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?			**X**	

		Potentially Significant Impact	Less Than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
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?			X	
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?			X	
f.	Otherwise substantially degrade water quality?			X	
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?				X
h.	Place within a 100-year flood hazard area structures that would impede or redirect flood flows?				X
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?			X	
j.	Inundation by seiche, tsunami, or mudflow?			X	
X.	**LAND USE AND PLANNING**. Would the project:				
a.	Physically divide an established community?				X
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?				X
c.	Conflict with any applicable habitat conservation plan or natural community conservation plan?				X
XI.	**MINERAL RESOURCES**. Would the project:				
a.	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
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?				X
XII.	**NOISE**. Would the project result in:				
a.	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
b.	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			X	
c.	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				X

		Potentially Significant Impact	Less Than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
d.	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		X		
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?				X
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?				X
XIII.	**POPULATION AND HOUSING**. Would the project:				
a.	Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b.	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c.	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X
XIV.	**PUBLIC SERVICES**.				
a.	Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
	i) Fire protection?			X	
	ii) Police protection?			X	
	iii) Schools?				X
	iv) Parks?				X
	v) Other public facilities?				X
XV.	**RECREATION**.				
a.	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
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?				X

	Potentially Significant Impact	Less Than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. TRANSPORTATION/TRAFFIC. Would the project:				
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?		**X**		
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?				**X**
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?				**X**
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				**X**
e. Result in inadequate emergency access?			**X**	
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?		**X**		
XVII. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			**X**	
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?				**X**
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?			**X**	
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				**X**
e. Result in a determination by the wastewater treatment provider that 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?				**X**
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			**X**	

		Potentially Significant Impact	Less Than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
g.	Comply with federal, state, and local statutes and regulations related to solid waste?			X	
XVIII.	**MANDATORY FINDINGS OF SIGNIFICANCE**.				
a.	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			X	
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, the effects of other current projects, and the effects of probable future projects.		X		
c.	Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?		X		

Page intentionally left blank

SECTION 3
ENVIRONMENTAL IMPACT ASSESSMENT

INTRODUCTION

The following discussion addresses impacts to various environmental resources per the Initial Study checklist questions contained in Appendix G of the CEQA Guidelines.

I. AESTHETICS

Would the project:

a) Have a substantial adverse effect on a scenic vista?

No Impact. The proposed project would not have an adverse effect on a scenic vista. Scenic views or vistas are panoramic public views of various natural features, including the ocean, striking or unusual natural terrain, or unique urban or historic features. Public access to these views may be from park lands, private and publicly owned sites, and public right-of-way.[1] The project site is located entirely within public roadway rights-of-way in urbanized and fully developed areas within the community of Reseda-West Van Nuys. The Reseda-West Van Nuys Community Plan and the adjacent Northridge Community Plan do not identify any official scenic vistas within or adjacent to the project area[2,3] Further, the proposed project involves cut and cover trenching within public streets to install ERDIP. Each segment would be covered with metal plates during periods of the day when construction is not on-going. Once the pipe has been installed within a segment, the trench would be backfilled and returned to its original condition such that there would be no visible change to the roadways. Therefore, the views from vantage points adjacent to the project site would remain similar to existing conditions. No impact to a scenic vista would occur.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. Implementation of the proposed project would not damage scenic resources within a state scenic highway. No designated California Scenic Highways are located near the project site.[4] Additionally, no Designated Scenic Highways in the Transportation Element of the City of Los Angeles General Plan are located near the project site.[5] As discussed above, the proposed project involves trenching within public streets to install ERDIP. Once the pipe has been installed within a segment, the trench would be backfilled and the roadway returned to its original condition. Accordingly, no scenic roadway would be altered as a result of the implementation of the proposed project. No impact would occur.

---

1 City of Los Angeles Department of City Planning, *City of Los Angeles General Plan, Conservation Element*, adopted September 26, 2001.

2 City of Los Angeles Department of City Planning, *Reseda-West Van Nuys Community Plan*, adopted November 17, 1999.

3 City of Los Angeles Department of City Planning, *Northridge Community Plan*, updated February 24, 1998.

4 State of California Department of Transportation. *State Scenic Highway Program*. Website: http://www.dot.ca.gov/hq/LandArch/scenic_highways/scenic_hwy.htm, accessed September 30, 2013.

5 City of Los Angeles Department of City Planning, *City of Los Angeles General Plan, Transportation Element*, adopted September 8, 1999.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

No Impact. The proposed project involves trenching within public roadway rights-of-way to install ERDIP. As discussed in Section I(a) above, each segment would be covered with metal plates during periods of the day when construction is not on-going. Once the pipe has been installed within a segment, the trench would be backfilled and returned to its original condition. Following the completion of construction, there would be no visible change to the roadways. Therefore, there would be no change to the visual character or quality of the roadways, and no impact would occur.

d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

No Impact. Implementation of the proposed project would not create a new source of light or glare that would adversely affect day or nighttime views. The proposed project would be constructed primarily during daylight within public roadway rights-of-way. No permanent night lighting or reflective surfaces would be installed because operation would occur entirely below-grade. Therefore, no impact would occur.

II. AGRICULTURE AND FORESTRY RESOURCES

Would the project:

a) Convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The project site is located in a fully urbanized portion of the community of Reseda-West Van Nuys and would be located entirely within public roadway rights-of-way. The proposed alignment is designated as Urban and Built-Up Land on the "Important Farmland in California" map prepared by the California Resources Agency pursuant to the Farmland Mapping and Monitoring Program. Thus, no part of the proposed alignment would be located on or near Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.[6] Therefore, the proposed project would not convert farmland to a non-agricultural use, and no impact to farmland would occur.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. As discussed in Section II(a) above, the proposed project would be located entirely within public roadway rights-of-way. Furthermore, the County of

[6] State of California Department of Conservation, Division of Land Resource Protection, Farmland Mapping & Monitoring Program, *Important Farmland in California, 2008* map. Website: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/statewide/2008/fmmp2008_08_11.pdf, accessed September 30, 2013.

Los Angeles does not offer Williamson Act contracts.[7] Therefore, the proposed project would not conflict with existing zoning or a Williamson Act contract. No impact would occur.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. The proposed project would be located entirely within public roadway rights-of-way in a fully urbanized portion of the community of Reseda-West Van Nuys. No portion of the proposed alignment is zoned for or developed as forest land or timberland as defined in Public Resources Code Section 12220(g) and Government Code Section 4526, respectively.[8] Therefore, the proposed project would not conflict with existing zoning for or cause a rezoning of forest or timberland. No impact would occur.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. As discussed above, no portion of the proposed alignment is zoned or developed for a forest land use, and the proposed alignment is not located within or adjacent to forest lands.[9] Therefore, the proposed project would not result in the loss of forest land or conversion of forest land to non-forest use. No impact would occur.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact. The proposed project involves trenching within public roadway rights-of-way. The project site and adjacent properties are designated as "Urban and Built-Up Land;" no portion of the project site or surrounding area is identified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.[10] Additionally, no forest lands exist on or adjacent to the project area. Therefore, the proposed project would not change the existing environment in a way that would result in the conversion of Farmland to non-agricultural use or forest land to non-forest use. No impact would occur.

---

7 State of California Department of Conservation, Division of Land Resource Protection, *Williamson Act Program – Basic Contract Provisions*. Website: http://www.conservation.ca.gov/dlrp/lca/basic_contract_provisions, accessed September 30, 2013.

8 City of Los Angeles Zoning Information and Map Access System (ZIMAS). Website: http://zimas.lacity.org/, accessed September 30, 2013.

9 *Ibid*.

10 State of California Department of Conservation, Division of Land Resource Protection, Farmland Mapping & Monitoring Program. *Important Farmland in California. 2008*. Website: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/statewide/2008/fmmp2008_08_11.pdf, accessed September 30, 2013.

III. AIR QUALITY

Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan (e.g., the SCAQMD Plan or Congestion Management Plan)?

Less Than Significant Impact. The South Coast Air Quality Management District (SCAQMD) and the Southern California Association of Governments (SCAG) have the responsibility for preparing an Air Quality Management Plan (AQMP), which implements federal Clean Air Act and California Clean Air Act requirements, and details goals, policies, and programs for improving air quality in the South Coast Air Basin (Basin). The 6,745-square-mile Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. It is bounded by the Pacific Ocean to the west; the San Gabriel, San Bernardino and San Jacinto Mountains to the north and east; and the San Diego County line to the south. Ambient pollution concentrations recorded in the Los Angeles County portion of the Basin are among the highest in the four counties comprising the Basin. The United States Environmental Protection Agency (USEPA) has classified the Basin as nonattainment areas for ozone (O_3), particulate matter ($PM_{2.5}$ and PM_{10}), and lead (Pb). This classification denotes that the Basin does not meet the National Ambient Air Quality Standards for these pollutants. In addition, under the California Clean Air Act, the Los Angeles County portion of the Basin is designated as a non-attainment area for O_3, $PM_{2.5}$, PM_{10}, and Pb. The 2007 AQMP was adopted by the SCAQMD Governing Board on June 1, 2007, and the California Air Resources Board (CARB) on September 27, 2007, to set forth a comprehensive program that will lead the region into compliance with federal air quality standards for 8-hour O_3 and $PM_{2.5}$.

The determination of AQMP consistency is primarily concerned with the long-term influence of the proposed project on air quality in the Basin. According to the SCAQMD, there are two key indicators of consistency with the AQMP: 1) whether the project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP; and 2) whether the project will not exceed the assumptions in the AQMP based on the year of project buildout.[11] The first consistency criterion refers to violations of the California Ambient Air Quality Standards. The proposed project does not include operational activity beyond routine maintenance activities. Operational activity would not generate regional emissions that could interfere with attainment or maintenance of ambient air quality standards. In addition, the proposed project would comply with state and local strategies designed to control air pollution. Therefore, the proposed project would comply with Consistency Criterion No. 1.

The second consistency criterion requires that the proposed project not exceed the assumptions in the AQMP. A project is consistent with the AQMP if it is consistent with the population, housing, and employment assumptions that were used in the development of the AQMP. The proposed project does not include a residential component, and therefore, would not increase population or housing in the area. In

[11] SCAQMD, *The CEQA Air Quality Handbook,* 1993.

addition, the proposed project would not increase employment since upon completion of construction of the replacement pipeline, the project area would return to existing conditions. As such, the proposed project is considered to be consistent with growth assumptions included in the AQMP, and it would comply with Consistency Criterion No. 2.

Therefore, the proposed project would not conflict with or obstruct implementation of the applicable air quality management plan. The impact would be less than significant.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less Than Significant Impact. The SCAQMD has developed construction and operational thresholds of significance to ascertain if projects comply with air quality regulations. Construction of the proposed project would contribute air quality emissions through the use of heavy-duty construction equipment, truck delivery and haul trips, and vehicle trips generated by construction workers traveling to and from the project site for all six segments of the proposed project. Fugitive dust ($PM_{2.5}$ and PM_{10}) emissions would primarily result from trenching activities. Nitrogen oxide (NO_X) emissions would primarily result from the use of construction equipment. The assessment of construction air quality impacts considers each of these potential sources.

It is mandatory for all construction projects in the Basin to comply with SCAQMD Rule 403 for Fugitive Dust. As discussed in Section 1.7 of the Project Description, specific Rule 403 control requirements include, but are not limited to, applying water in sufficient quantities to prevent the generation of visible dust plumes, applying soil binders to uncovered areas, reestablishing ground cover as quickly as possible, utilizing a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the project site, and maintaining effective cover over exposed areas. Compliance with Rule 403 would reduce regional $PM_{2.5}$ and PM_{10} emissions associated with construction activities by approximately 61 percent in accordance with SCAQMD guidance.

Table 1 shows the maximum daily emissions associated with construction. Construction emissions would not exceed the SCAQMD regional significance thresholds. Therefore, the impact related to regional construction emissions would be less than significant.

Upon completion of the proposed pipeline, the proposed project would not include new operational activities. Therefore, no impact to regional operational emissions would occur.

Table 1 Regional Construction Emissions

Construction Phase	Emission Source	Estimated Emissions (lbs/day)					
		ROG	CO	NO_x	SO_x	PM_{10}	$PM_{2.5}$
Trenching	Construction Equipment	1.6	3.0	4.0	0.01	0.27	0.25
	Fugitive Dust	--	--	--	--	0.02	0.01
	Worker Commute	0.05	0.22	0.37	0.0	0.04	0.04
	Delivery Trucks	0.05	0.20	1.1	0.0	0.02	0.02
	Haul Trucks	0.07	0.31	1.7	0.0	0.03	0.02
Maximum Regional Total		1.8	3.7	7.2	0.01	0.38	0.34
Regional Significance Threshold		*75*	*550*	*100*	*150*	*150*	*55*
Exceed Threshold?		**No**	**No**	**No**	**No**	**No**	**No**

SOURCE: Terry A. Hayes Associates, 2013.

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)?

Less Than Significant Impact. The proposed project would not result in a cumulatively considerable net increase of a criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. The proposed project and the whole of the Los Angeles metropolitan area are located within the Basin, which is characterized by relatively poor air quality. The Basin is currently classified as a federal and state non-attainment area for O_3, PM_{10}, $PM_{2.5}$, and lead and a federal attainment/maintenance area for CO. It is classified as a state attainment area for CO, and it currently meets the federal and state standards for nitrogen dioxide (NO_2), sulfur oxide (SO_X), and Pb.

Because the Basin is designated as a state and/or federal non-attainment air basin for O_3, PM_{10} and $PM_{2.5}$, and NO_2, there is an ongoing regional cumulative impact associated with these pollutants. An individual project can emit these pollutants without significantly contributing to this cumulative impact depending on the magnitude of emissions. The SCAQMD has indicated that the there are instances when the project-level thresholds may be used as an indicator defining if project emissions contribute to the regional cumulative impact. The use of the project-specific thresholds to determine a cumulative impact is acceptable for a project that is not constructed, by necessity, with another project. The proposed project is not dependent on another project and the project-level thresholds have been deemed appropriate for assessing the cumulative impact.

As discussed in Section III(b) above, the proposed project would not generate air pollutant emissions that exceed the project-level thresholds. Therefore, the proposed project would not significantly contribute to cumulative regional emissions and no impact to a cumulatively considerable net increase in emissions during operations would occur.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. CARB has identified the following groups who are most likely to be affected by air pollution: children less than 14 years of age, the elderly over 65

years of age, athletes, and people with cardiovascular and chronic respiratory diseases. According to the SCAQMD, sensitive receptors include: residences, schools, playgrounds, child care centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

The proposed project would be located in urbanized and fully developed areas in the Reseda-West Van Nuys community of the City of Los Angeles. The proposed pipeline alignment is located adjacent to the Northridge Hospital Medical Center. Residences are located adjacent to the proposed pipeline alignment and throughout the project area. In addition, Reseda and Roscoe Boulevards include a mix of residential, medical, and commercial land uses. Institutional land uses that are sensitive to increased air pollution levels are also located in the project area. These include:

- Bright Horizons Child Center (18460 Cantara Street)
- New Horizon Foursquare Church (8055 Reseda Boulevard)
- LIFEhouse Christian Preschool (18355 Roscoe Boulevard)

Construction activity would generate on-site pollutant emissions associated with equipment exhaust and fugitive dust. Table 2 shows the estimated localized emissions.

Table 2 Localized Construction Emissions

Construction Phase	Emission Source	Estimated Emissions (lbs/day)					
		ROG	**CO**	**NO_x**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Trenching	Construction Equipment	1.6	3.0	4.0	0.01	0.27	0.25
	Fugitive Dust	--	--	--	--	0.02	0.01
Maximum Localized Total		1.6	3.0	4.0	0.01	0.29	0.26
Localized Significance Threshold		*--*	*426*	*103*	*--*	*3*	*4*
Exceed Threshold?		**No**	**No**	**No**	**No**	**No**	**No**

SOURCE: Terry A. Hayes Associates, 2013.

Maximum daily emissions would not exceed the SCAQMD localized significance thresholds. Therefore, the impact to sensitive receptors would be less than significant.

The greatest potential for toxic air contaminant (TAC) emissions during construction would be diesel particulate emissions associated with heavy-duty equipment operations. The SCAQMD has not published guidance for assessing the risk from construction projects. The California Air Pollution Control Officers Association (CAPCOA) has published Health Risk Assessments for Proposed Land Use Projects. It states that "this guidance does not include how risk assessments for construction projects should be addressed in CEQA. As this is intended to be a 'living document', the risks near construction projects are expected to be included at a later time as the toxic emissions from construction activities are better quantified. State risk assessment policy is likely to change to reflect current science, and therefore this document will need modification as this occurs."[12] Nonetheless, as regional and localized particulate matter emissions

[12] California Air Pollution Control Officers Association, Health Risk Assessments for Proposed Land Use Projects, 2009.

resulting from construction activities would not result in significant impacts, it is similarly anticipated that diesel particulate emissions would not result in a significant health impact. Therefore, construction of the proposed project would result in a less than significant impact to sensitive receptors related to TAC emissions.

Upon completion of the proposed pipeline, the proposed project would not include new operational activities. Therefore, no impacts related to operational exposure to pollutant concentrations would occur.

e) Create objectionable odors affecting a substantial number of people?

Less Than Significant Impact. Potential sources that may emit odors during construction activities include equipment exhaust. Odors from these sources would be localized and generally confined to the immediate area surrounding the pipeline segment under construction. The proposed project would utilize typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. Therefore, the odor impact during construction would be less than significant.

Upon completion of the pipeline, the proposed project would not include new operational activities. Therefore, no impacts related to operational odors would occur.

IV. BIOLOGICAL RESOURCES

Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

No Impact. Sensitive plants include those listed as threatened or endangered, proposed for listing, or candidate for listing by the U.S. Fish and Wildlife Service (USFWS) and/or California Department of Fish and Wildlife (CDFW) or those listed by the California Native Plant Society. Sensitive wildlife species are those species listed as threatened or endangered, proposed for listing, or candidate for listing by USFWS and/or CDFW, or considered special status by CDFW. Sensitive habitats are those that are regulated by USFWS, U.S. Army Corps of Engineers, and/or those considered sensitive by the CDFW.

The California Natural Diversity Database and the California Native Plant Society *Inventory of Rare and Endangered Plants* were reviewed for information on known occurrences of sensitive species and communities within a 10-mile radius of the project site; it included the Beverly Hills, Calabasas, Canoga Park, Malibu Beach, Oat Mountain, San Fernando, Santa Susana, Topanga, and Van Nuys U.S. Geological Survey 7.5-minute topographic quadrangle maps.[13,14] Based on the

[13] California Department of Fish and Wildlife. *California Natural Diversity Database* (Version 3.1.0). Biogeographic Data Branch. Accessed on October 4, 2013.

[14] California Native Plant Society. *Inventory of Rare and Endangered Plants* (online edition, v8-02). Sacramento, CA. Accessed on October 4, 2013.

above literature review, 11 sensitive wildlife species, 13 sensitive plant species, and 8 sensitive plant communities were identified as having the potential to occur in the vicinity (i.e., within 10 miles) of the proposed pipeline alignment.

Because the proposed project would involve trenching entirely within public roadway rights-of-way in a fully urbanized portion of the community of Reseda-West Van Nuys, there would be no direct impacts to sensitive plants, wildlife, or vegetation communities. No vegetation removal would be required to install the proposed earthquake resistant piping. Further, all construction staging would occur within the roadway or nearby developed areas, such that no vegetation removal would be required and there would be no indirect impacts to native vegetation, sensitive plants, sensitive wildlife species, or sensitive vegetation communities.

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?

No Impact. As discussed in Section IV(a) above, construction activities would occur entirely within public roadway rights-of-way in a fully urbanized portion of the community of Reseda-West Van Nuys. No vegetation removal would occur, and there would be no impact to a riparian habitat or other sensitive natural community.

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.) through direct removal, filling, hydrological interruption, or other means?

No Impact. As discussed in Section IV(a) above, construction activities would occur entirely within public roadway rights-of-way in a fully urbanized portion of the community of Reseda-West Van Nuys. There would be no impact to federally protected wetlands.

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 native wildlife nursery/breeding sites?

No Impact. In an urban context, a wildlife migration corridor can be defined as a linear landscape feature of sufficient width and buffer to allow animal movement between two comparatively undisturbed habitat fragments, or between a habitat fragment and some vital resources, thereby encouraging population growth and diversity. A viable wildlife migration corridor consists of more than a path between fragmented habitats. A wildlife migration corridor must also include adequate vegetative cover and food sources for transient species, as well as resident populations of less mobile animals to survive. They must be extensive enough to allow for large animals to pass relatively undetected, be free of obstacles, and lack any other distraction that may hinder wildlife passage such as lights or noise.

As discussed in Section IV(a) above, construction activities would occur entirely within public roadway rights-of-way in a fully urbanized portion of the community of Reseda-West Van Nuys. Therefore, the proposed alignment does not constitute a

wildlife corridor or abut one. No vegetation removal would occur, and no water bodies would be affected. Therefore, there would be no impact to suitable nesting or migratory habitat. No impact would occur.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (e.g., oak trees or California walnut woodlands)?

No Impact. The proposed project would not conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. Construction of the proposed project would not require removal of vegetation, including trees under the protection of the City of Los Angeles Tree Protection Ordinance.[15] No impact to protected trees would occur.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. The proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. The proposed alignment is not located within any Significant Ecological Areas or designated Critical Habitat. No regional habitat conservation plans or Natural Community Conservation Plans have been adopted within the project area.[16] No impact would occur.

V. CULTURAL RESOURCES

Potential impacts to cultural resources associated with the proposed project were determined from the results presented in the Cultural Resources Assessment (see Appendix C).

Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations Section 15064.5?

Less Than Significant Impact. The project area and a study area encompassing a 0.5-mile radius around the project area were examined for cultural resource investigations and previously recorded cultural resource sites. The archival research included a review of previously recorded archaeological site records and reports, historic site and property inventories, and historic maps, including Sanborn Fire Insurance Maps.

The records search indicated that a single cultural resource has been previously recorded within a 0.5-mile radius of the project site, located just north of the project area, but not within the proposed project alignment. No historic resources, landmarks, or monuments were recorded with the California State Historic

[15] City of Los Angeles Municipal Code, Section 17.02.
[16] County of Los Angeles, *General Plan, Significant Ecological Areas and Coastal Resource Areas Map*, October 2011.

Resources Inventory, California Historical Landmarks, or Los Angeles Historic Cultural Monument Register within the 0.5-mile radius of the project site.

The proposed project would parallel two resources that are historic in age, including commercial buildings located near the intersection of Roscoe and Reseda Boulevards and the Northridge Hospital Medical Center. However, as the proposed project would occur entirely within the adjacent roadways and no visible project components would remain following installation of the ERDIP, it would not result in any direct or indirect impacts to these resources.

There are no significant historical resources within the proposed project alignment. Therefore, the proposed project would not cause a substantial adverse change in the significance of a historical resource, and impacts would be less than significant.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to California Code of Regulations Section 15064.5?

Less Than Significant Impact. A cultural resources field survey of the project site was conducted on September 18, 2013. The field survey of the project area did not result in the identification of any previously unknown archaeological resources. However, as discussed in Section V(a), the proposed project alignment would intersect with two resources that are historic in age: commercial buildings located near the intersection of Roscoe and Reseda Boulevards and the Northridge Hospital Medical Center. As stated above, the proposed project would not result in direct or indirect impacts to these resources; however, work in the vicinity of these resources may encounter previously unknown buried resources.

The location of the proposed project alignment is in the vicinity of the Mission San Fernando and many historic events, including the signing of the Mexican-American war Treaty of Cahuenga. In addition, prehistoric villages have long been rumored or documented as being located near portions of the project area. The project area's location relative to the nearby water sources would have provided access to important resources during all periods of prehistory. Subsequent land use has included modern and historic development such as the establishment of the Zelzah Ranch, the only Southern Pacific railroad stop in the valley, and the construction of the Los Angeles Aqueduct. In addition, the project area includes the streets of Reseda Boulevard, Roscoe Boulevard, Etiwanda Avenue, Cantara Street, and Strathern Street, all dating between the early 1900s to the early 1950s. It is possible that archaeological resources could be buried beneath the ground surface, especially in areas where development has included only minimal ground disturbance where the roadway may have effectively capped buried prehistoric or historic resources.

As part of the cultural resources investigation, a Native American contact program was conducted to inform interested parties of the proposed project and to address any concerns regarding Traditional Cultural Properties or other resources that might be affected by the proposed project. The program involved contacting Native American representatives provided by the Native American Heritage Commission to solicit comments and concerns regarding the proposed project. A letter was prepared and mailed to the Native American Heritage Commission on September 10, 2013. The letter requested that a Sacred Lands File search be conducted for

the proposed project and that contact information be provided for Native American groups or individuals that may have concerns about cultural resources in the project area. The Native American Heritage Commission responded to the request in a letter dated September 12, 2013. The letter stated that a records search of the Sacred Lands File "failed to indicate the presence of Native American traditional cultural place(s)," in the project area. However, the "absence of archaeological or Native American sacred places/sites does not preclude their existence."

Based on the results of the archival research and survey, archaeological resources may be encountered during ground disturbing activities for the proposed project. Ground disturbance required for the proposed project is not expected to exceed 5 feet in depth. In the event archaeological resources are encountered during ground disturbing activities, LADWP would be required to contact a qualified archaeologist to evaluate and determine appropriate treatment for the resource in accordance with California Public Resource Code Section 21083.2(i). Work would be temporarily halted until the evaluation is completed. If any Native American cultural material is encountered within the project site, consultation with interested Native American parties shall be conducted to apprise them of any such findings and solicit any comments they may have regarding appropriate treatment and disposition of the resources. Compliance with these existing regulations would ensure that impacts to archaeological resources would be less than significant.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact. A paleontological records search was conducted for the proposed project by Dr. Samuel McLeod, Vertebrate Paleontology Division of the Natural History Museum of Los Angeles County. The records search indicated that there is no known vertebrate fossil locality that lies within the proposed project alignment; however, nearby fossil localities are known to exist from the same sedimentary deposits that occur along the proposed project alignment.

The project area surface deposits consist of soil and younger Quaternary Alluvium, derived as a mixture of alluvial fan deposits from the Santa Susana Mountains to the northwest, as well as fluvial deposits. These deposits found throughout the San Fernando Valley typically do not contain significant vertebrate fossils, at least in the uppermost layers, but older Quaternary deposits found at depth may contain significant fossil vertebrate remains.

Excavations that extend into surficial younger Quaternary Alluvium within the proposed project alignment are unlikely to produce significant fossil vertebrate remains. Therefore, the impact to paleontological resources would be less than significant, and no mitigation is required.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant Impact. No formal cemeteries or other places of human internment are known to exist within the project site. No evidence of human remains was observed on the surface during site surveys within the proposed project alignment (see Appendix C). As discussed in Section V(b) above, a Sacred

Lands File search and Native American contact program were conducted for the proposed project. Although not expected, human remains could be encountered during construction. In the event that any human remains or related resources are discovered, such resources would be treated in accordance with state and local regulations and guidelines for disclosure, recovery, relocation, and preservation, as appropriate, including CEQA Guidelines Section 15064.5(e). Work in the immediate vicinity of the discovery would be suspended until the remains are evaluated by the county coroner as to the nature of the remains. If the remains are determined to be of Native American origin, the Native American Heritage Commission shall be contacted and a Most Likely Descendent identified pursuant to Public Resources Code Section 5097.98 and California Code of Regulations Section 15064.5. Compliance with existing regulations would ensure that impacts related to the discovery of human remains would be less than significant.

VI. GEOLOGY AND SOILS

Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less Than Significant Impact. The proposed project would not expose people or structures to new adverse effects associated with rupture of a known earthquake fault. Although the Northridge Hills fault and Chatsworth fault are located within close proximity to the project site, the project site is not located within an Alquist-Priolo or City-designated fault rupture zone.[17,18] However, the area experienced substantial ground failures during the 1994 Northridge Earthquake. Currently, the existing water distribution main is in need of replacement due to the age of the pipe. The proposed project would replace the existing public water distribution main with earthquake resistant ductile iron piping, chosen specifically for its successful use in seismically-active regions in Japan. Additionally, the proposed pipeline would be designed and constructed in accordance with the latest version of the City of Los Angeles Building Code and other applicable federal, state, and local codes relative to seismic criteria. The use of earthquake resistant piping and compliance with existing regulations would ensure a less than significant impact related to fault rupture.

ii) Strong seismic ground shaking?

Less Than Significant Impact. The project site is located within the seismically active southern California region, and like all locations within the area, is subject to strong seismic ground shaking. However, as discussed in Section VI(a)(i) above, the proposed pipeline would use earthquake resistant

[17] U.S. Geological Survey, *Faults of the Los Angeles Area*. Website: http://earthquake.usgs.gov/regional/sca/la_faults.pdf, accessed October 4, 2013.

[18] City of Los Angeles Department of City Planning, Environmental and Public Facilities Maps, *Alquist-Priolo Special Study Zones & Fault Rupture Study Areas* Map, September 1996.

ductile iron pipes to withstand seismic-related events and be designed and constructed in accordance with the latest version of the City of Los Angeles Building Code and other applicable federal, state, and local codes relative to seismic criteria. Additionally, the proposed project would not include any habitable structures. Therefore, the impact from strong seismic ground shaking would be less than significant.

iii) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Portions of the project site are located within a City-designated liquefiable area.[19] The proposed project would use earthquake resistant pipes and would be designed and constructed in compliance with the latest version of the City of Los Angeles Building Code and other applicable federal, state, and local codes relative to liquefaction criteria. Compliance with existing regulations would ensure a less than significant impact related to seismic-related ground failure, including liquefaction.

iv) Landslides?

No Impact. The project site is not located within a City-designated hillside area or earthquake induced landslide area.[20,21] Further, construction and excavation activities within public roadway rights-of-way would not be expected to increase the risk of landslides in the hillside areas. No impact related to landslides would occur.

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. Construction activities would expose soils for a limited time, allowing for possible erosion. However, all excavation would comply with all applicable provisions of Chapter IX, Division 70 of the Los Angeles Municipal Code, which addresses grading, excavation, and fill. During construction, transport of sediments from the project site by stormwater runoff and winds would be prevented through the use of appropriate BMPs. As discussed in Section 1.7 above, Rule 403 dust control measures would be implemented as required by the SCAQMD. Additionally, LADWP would develop and implement a SWPPP for construction activities, in compliance with the latest National Pollutant Discharge Elimination System requirements for stormwater discharges. The SWPPP would include erosion control. Implementation of the required construction BMPs would ensure that soil erosion impacts would be less than significant.

No large areas of exposed soils subject to erosion would be created or affected by operation of the proposed project. Therefore, there would be no long-term impact related to erosion and loss of topsoil.

[19] City of Los Angeles Department of City Planning, Environmental and Public Facilities Maps, *Areas Susceptible to Liquefaction* Map, September 1996.

[20] City of Los Angeles Department of City Planning, Environmental and Public Facilities Maps, *Landslide Inventory & Hillside Areas* Map, September 1996.

[21] California Department of Conservation Division of Mines and Geology. *State of California Seismic Hazard Zones Canoga Park Quadrangle*. February 1, 1998.

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?

Less Than Significant Impact. One of the major types of liquefaction induced ground failure is lateral spreading of mildly sloping ground. Lateral spreading involves primarily side-to-side movement of earth materials due to ground shaking, and is evidenced by near-vertical cracks to predominantly horizontal movement of the soil mass involved. As discussed in Sections VI(a)(iii) and VI(a)(iv) above, the project site is located in an area identified as being at risk for liquefaction, but is not located within a designated hillside area.[22,23] Additionally, liquefaction-related effects were observed in the quadrangle from the 1994 Northridge earthquake.[24] However, the proposed project would use earthquake resistant piping and all construction work would adhere to the latest version of the City of Los Angeles Building Code, and other applicable federal, state, and local codes relative to liquefaction criteria.

Subsidence is the lowering of surface elevation due to changes occurring underground, such as the extraction of large amounts of groundwater, oil, or gas. When groundwater is extracted from aquifers at a rate that exceeds the rate of replenishment, overdraft occurs, which can lead to subsidence. However, the proposed project does not anticipate the extraction of any groundwater, oil, or gas from the project site. Therefore, subsidence would not occur.

Collapsible soils consist of loose dry materials that collapse and compact under the addition of water or excessive loading. Collapsible soils are prevalent throughout the southwestern United States, specifically in areas of young alluvial fans. Soil collapse occurs when the land surface is saturated at depths greater than those reached by typical rain events. The areas within the Canoga Park U.S. Geological Survey 7.5-minute quadrangle consist mainly of alleviated valleys, floodplains, and canyon regions and is related to young, loose alluvial sediments and a shallow water table.[25] However, the proposed project would be constructed in accordance with the latest version of the City of Los Angeles Building Code and other applicable federal, state, and local codes relative to seismic criteria. These building codes are designed to ensure safe construction. Compliance with existing regulations would ensure a less than significant impact.

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?

Less Than Significant Impact. Expansive soils are clay-based soils that tend to expand (increase in volume) as they absorb water and shrink (lessen in volume) as water is drawn away. If soils consist of expansive clays, foundation movement and/or damage can occur if wetting and drying of the clay does not occur uniformly across the entire area. The on-site geologic materials in the project area consist of

[22] City of Los Angeles Department of City Planning, Environmental and Public Facilities Maps, *Landslide Inventory & Hillside Areas* Map, September 1996.

[23] California Department of Conservation Division of Mines and Geology. *State of California Seismic Hazard Zones Canoga Park Quadrangle*. February 1, 1998.

[24] California Department of Conservation, *Seismic Hazard Zone Report for the Los Angeles 7.5-Minute Quadrangle, Los Angeles County, California*, 1998.

[25] *Ibid*.

Dublin loam, Yolo loam, Dublin clay loam, and Yolo silty clay loam.[26] Due to the mix of earth materials underlying the project site, these soils are not expected to be high clay-bearing, and expansion potential is considered low. Additionally, the proposed project would be constructed in accordance with the latest version of the City of Los Angeles Building Code and other applicable federal, state, and local codes relative to seismic criteria. Furthermore, the proposed project does not include any habitable structures. Therefore, the proposed project would not create a substantial risk to life or property resulting from expansive soils, and the impact would be less than significant.

e) Have soils incapable of adequately supporting use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. The proposed project involves installation of ERDIP within the community of Reseda-West Van Nuys. No septic tanks or alternative wastewater disposal systems are proposed. Therefore, no impact associated with the use of such systems would occur.

VII. GREENHOUSE GAS EMISSIONS

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact. Greenhouse gas (GHG) emissions refer to a group of emissions that are generally believed to affect global climate conditions. The greenhouse effect compares the Earth and the atmosphere surrounding it to a greenhouse with glass panes. The glass panes in a greenhouse let heat from sunlight in and reduce the amount of heat that escapes. GHGs, such as carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), keep the average surface temperature of the Earth close to 60 degrees Fahrenheit. Of all the GHGs, CO_2 is the most abundant gas that contributes to climate change through fossil fuel combustion. The other GHGs are less abundant, but have higher global warming potential than CO_2. To account for this higher potential, emissions of other GHGs are frequently expressed in the equivalent mass of CO_2, denoted as CO_2e.

The SCAQMD has not approved a GHG significance threshold for the development of non-SCAQMD and non-industrial projects. The significance threshold is based on the methodologies recommended by the CAPCOA CEQA and Climate Change white paper.[27] A significance threshold of 10,000 metric tons per year, which is the standard used by the Market Advisory Committee for inclusion in a GHG Cap and Trade System in California, was used based on an assessment of the CAPCOA document.

[26] U.S. Department of Agriculture, Bureau of Soils, *Soil Survey of the San Fernando Valley Area, California*, 1917. Website: http://soils.usda.gov/survey/online_surveys/california/SanFernandoValley1917/Soil_map.pdf, accessed October 8, 2013.

[27] California Air Pollution Control Officers Association, *CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*, January 2008.

GHG emissions were estimated for equipment exhaust, truck trips, and worker commute trips. Construction is scheduled to be completed in approximately one year. The SCAQMD recommends emissions for construction to be amortized over 30 years. As shown in Table 3, maximum GHG emissions would be 11 metric tons per year. Estimated GHG emissions would be less than the 10,000 metric tons of CO_2e per year quantitative significance threshold. Therefore, the GHG emissions impact would be less than significant during construction of the proposed project.

Table 3 Annual Greenhouse Gas Emissions

Source	Carbon Dioxide Equivalent (Metric Tons per Year)
Amortized Construction Emissions	11
Significance Threshold	*10,000*
Exceed Threshold?	No

Source: Terry A. Hayes Associates, 2013.

Upon completion of the proposed pipeline, the proposed project would not include any new operational activities. Therefore, no impacts related to GHG emissions would occur.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

No Impact. As shown in Table 3 above, the proposed project would not generate significant construction emissions. In addition, the proposed project would not generate operational emissions. The proposed project would not conflict with any state or local climate change policy or regulation adopted for the purpose of reducing emissions of GHGs. Therefore, no impact would occur.

VIII. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact. Implementation of the proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Construction activities would be temporary in nature and would involve the limited transport, storage, use, and disposal of hazardous materials. Such hazardous materials could include on-site fueling/servicing of construction equipment, and the transport of fuels, lubricating fluids, and solvents. These types of materials are not acutely hazardous, and all storage, handling, and disposal of these materials are regulated by the California Department of Toxic Substances Control (DTSC), USEPA, the Occupational Safety & Health Administration, the Los Angeles County Fire Department, and the Los Angeles County Health Department. The transport, use, and disposal of construction-related hazardous materials would occur in conformance with applicable federal, state, and local regulations governing such activities. Therefore, the short-term construction impact would be less than significant.

Long-term operation of the proposed project would not involve the transport, storage, use, or disposal of hazardous materials. Additionally, the proposed project would not generate industrial wastes or toxic substances during operation. Therefore, project operation would not pose a significant hazard to the public or the environment. No operational impact related to the use or transport of hazardous materials would occur.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

No Impact. The proposed project construction would not 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. As discussed in Section VII(a) above, construction activities may involve limited transport, storage, use, or disposal of some hazardous materials, such as on-site fueling/servicing of construction equipment, and the transport of fuels, lubricating fluids, and solvents. These types of materials are not acutely hazardous, and compliance with existing federal, state, and local regulations would ensure that construction impacts related to reasonably foreseeable upset and accident conditions involving the release of hazardous materials would be less than significant. No impact would occur.

Long-term operation of the proposed project would not involve the transport, storage, use, or disposal of hazardous materials. Additionally, the proposed project would not generate industrial wastes or toxic substances during operation. Therefore, project operation would not pose a significant hazard to the public or the environment. No operational impact related to reasonably foreseeable upset or accident conditions would occur.

c) 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. The following schools are located within 0.25 mile of the proposed pipeline segments: John R. Wooden High School, Blythe Street Elementary School, Northridge Middle School, Cantara Street Elementary School, and Magnolia Science Academy-7 Elementary Middle School. As discussed in Section VIII(a) above, construction activities would involve limited transport, storage, use, and disposal of hazardous materials. However, these materials are not acutely hazardous and the transport, use, and disposal of construction-related hazardous materials would occur in conformance with all applicable federal, state, and local regulations governing such activities. Therefore, impacts related to hazardous materials within 0.25 mile of an existing or proposed school would be less than significant.

Long-term operation of the proposed project would not involve the transport, storage, use, or disposal of hazardous materials. Therefore, there would be no operational impact related to hazardous materials within 0.25 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?

Less Than Significant Impact. Four hazardous materials sites have been identified on or near the proposed pipeline segments. The State Water Resources Control Board's GeoTracker site identified four closed cleanup sites located along the proposed segments.[28] However, no active hazardous materials sites have been identified near or on the project site on the DTSC's EnviroStor database, the Cortese list, or the USEPA's National Priorities List.[29,30,31] These lists are compiled pursuant to Section 65962.5 of the Government Code. As discussed in Section 1.6 above, construction activities along the proposed segments would not require deep excavations. As such, it is not anticipated that any underground storage tanks would be encountered or disturbed during construction activities. Therefore, implementation of the proposed project would not create a significant hazard to the public or the environment. The impact would be less than significant.

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?

No Impact. The closest airport to the project site is the Van Nuys Airport, located approximately 2.1 miles east of the project site.[32] However, the proposed project would upgrade the water pipeline distribution main within a small portion of the community of Reseda-West Van Nuys and would be located entirely within public roadway rights-of-way. The proposed project would not result in a safety hazard related to an airport for people residing or working in the project area. No impact would occur.

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 project site is not located within the vicinity of a private airstrip.[33] However, the Northridge Hospital Medical Center heliport is located on the rooftop of the hospital building on the eastern portion of the medical facility property adjacent to the proposed alignment along Cantara Street and Etiwanda Avenue. Based on the approach and departure patterns of the helicopters, the location, height, and nature of construction activities within public roadway rights-of-way, the proposed project would not result in a safety hazard related to helicopter operations for people residing or working in the project area. No impact would occur.

---

28 California State Water Resources Control Board, *GeoTracker Database*, Search by Map Location. Website: http://geotracker.waterboards.ca.gov/, accessed September 30, 2013.

29 California Department of Toxic Substances Control, EnviroStor *Database*. Website: http://www.envirostor.dtsc.ca.gov/public/, accessed September 30, 2013.

30 California Department of Toxic Substances Control, *DTSC's Hazardous Waste and Substances Site List – Site Cleanup (Cortese List)*. Website: http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm, accessed September 30, 2013.

31 United States Environmental Protection Agency, *National Priorities List*, Search by Location. Website: http://www.epa.gov/superfund/sites/query/queryhtm/nplmapsg.htm, accessed September 30, 2013.

32 Airnav.com, Airports search. Website: http://www.airnav.com/airports/, accessed October 1, 2013

33 Ibid.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. The proposed project does not intersect with, run along, or is not located adjacent to any disaster routes within the City.[34] As described in Section 1.6 above, construction of the proposed project would involve temporary lane closures, which could have an effect on designated disaster routes. However, full roadway closures are not anticipated and any open trenches would be covered with steel plates during non-work hours. Additionally, a Traffic Management Plan (TMP) would be prepared prior to construction in coordination with the City of Los Angeles Department of Transportation (LADOT), the City of Los Angeles Fire Department (LAFD), and Northridge Hospital Medical Center prior to the start of construction. It would detail construction traffic control and detour methods, including ways in which to maintain access to the medical center access points throughout construction. Implementation of the TMP during construction and coordination with the City of Los Angeles Fire Department, and Northridge Hospital Medical Center would ensure that impacts related to emergency response plans would be less than significant. Following installation of the proposed pipeline, all roadways would be returned to their existing conditions. Therefore, no long-term impacts would result from operation of the proposed project.

h) 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?

No Impact. The project site is not located within a City-designated Wildfire Hazard Area or Fire Buffer Zone.[35] Therefore, the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. No impact would occur.

IX. HYDROLOGY AND WATER QUALITY

Would the project:

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

Less Than Significant Impact. The proposed project would not violate a water quality standard or waste discharge requirement. Construction activities, such as excavation, would result in the disturbance of soil and temporarily increase the potential for soil erosion. Additionally, construction activities and equipment would require the on-site use and storage of fuels, lubricants, and other hydrocarbon fluids. Storm events occurring during the construction phase would have the potential to carry disturbed sediments and spilled substances from construction activities off-site to nearby receiving waters.

[34] Los Angeles County Department of Public Works, Disaster Route Maps by City, *City of Los Angeles – Central Area Map*. Website: http://dpw.lacounty.gov/dsg/disasterRoutes/city.cfm, accessed October 1, 2013.

[35] City of Los Angeles Department of City Planning, Environmental and Public Facilities Maps, *Selected Wildfire Hazard Areas* Map, September 1996.

However, prior to the start of construction, LADWP would be required to obtain a General Construction Activity Storm Water Permit, issued by the State Water Resources Control Board. One of the conditions of the General Permit is the development and the implementation of a SWPPP, which would identify structural and non-structural BMPs to be implemented during the construction phase. As discussed in Section 1.7, LADWP would also develop and implement an erosion control plan for the proposed project. BMPs developed for the SWPPP and the erosion control plan may include, but not be limited to, minimizing the extent of disturbed areas and duration of exposure, stabilizing and protecting disturbed areas, keeping runoff velocities low, and retaining sediment within the construction area, as well as the use of temporary desilting basins, silt fences, gravel bag barriers, temporary soil stabilization, temporary drainage inlet protection, and diversion dikes and interceptor swales. With implementation of BMPs, the proposed project would not violate any water quality standards or waste discharge requirements. Therefore, impacts on water quality from construction activities would be less than significant.

Upon completion of the proposed project, storm flows would be directed to the existing storm drain system, similar to existing conditions. There would be no exposed soil remaining at completion of construction activities; therefore, there would be no potential for soil erosion or contamination. Therefore, operation of the proposed project would not violate any water quality standards or water 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. No groundwater wells are located within the proposed pipeline alignment; however, there are five wells located within one mile of the proposed pipeline alignment.[36] Groundwater levels measured at these five well locations range from 15 to 50 feet below ground surface.[37] As discussed in Section 1.6, excavation for trenches within which the pipe sections would be placed would occur to a depth of approximately 5 feet below ground surface. Therefore, it is not anticipated that groundwater would be encountered during construction as deep excavations would not be necessary. Additionally, the proposed project would replace existing public water distribution mains and would not involve any direct extraction of groundwater. Further, following installation of the proposed pipeline, the roadways would be returned to their existing conditions and there would be no change in the amount of impermeable surfaces. Therefore, the proposed project would neither decrease the amount of storm water entering the groundwater table through an increase in the amount of impermeable surfaces nor deplete groundwater through extraction. The impact to groundwater supply and recharge would be less than significant.

[36] Los Angeles County Department of Public Works, Ground Water Wells Website. Website: http://gis.dpw.lacounty.gov/wells/viewer.asp, accessed October 4, 2013.

[37] *Ibid*.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?

Less Than Significant Impact. The proposed pipeline would be located within existing roadways, which have been previously disturbed. All drainage flows would be routed through existing storm water infrastructure along the proposed pipeline alignment. As discussed, following installation of the proposed replacement pipelines, the roadways would be returned to their existing conditions. As such, storm water flows would generally follow the same course as existing flows. Construction activities would temporarily increase the potential for erosion due to excavation. However, compliance with the SWPPP and the erosion control plan developed for the proposed project would minimize impacts. Therefore, impacts related to erosion resulting from altered drainage patterns would be less than significant.

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. The project site consists entirely of existing roadways. All drainage flows would be routed through existing storm water infrastructure serving the project site and surrounding areas. Additionally, following construction of the proposed project, all roadways would be returned to their original condition. As such, after construction, storm water flows would be similar to the current condition, and the proposed project does not have the potential to substantially increase the rate of surface runoff. As discussed in Section IX(a) above, BMPs would be implemented to control runoff from the project site during construction. Therefore, no flooding is expected to occur on- or off-site as a result of the proposed project. The impact would be less than significant.

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 discussed above, implementation of the proposed project would result in a similar amount of permeable surfaces as under existing conditions. Thus, no substantial increase in the amount of runoff from the project site is anticipated. Construction would require water, as necessary, to control fugitive dust. Fugitive dust emissions at the construction site 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 proposed pipeline alignment. BMPs would be identified in the SWPPP developed for the proposed project pursuant to the National Pollutant Discharge Elimination System permit requirements to control runoff from the project sites during construction. Thus, the proposed project would not create or contribute runoff, which would exceed drainage system capacity, or provide substantial additional sources of polluted runoff. The impact would be less than significant.

f) Otherwise substantially degrade water quality?

Less Than Significant Impact. Other than the sources described for construction activities (i.e., potential soil erosion and fuels for construction equipment), the proposed project does not include other potential sources of contaminants that could potentially degrade water quality. Additionally, as discussed in Section IX(a) above, a SWPPP and an erosion control plan would be developed and implemented for the proposed project construction to prevent the degradation of water quality pursuant to the National Pollutant Discharge Elimination System permit. Compliance with existing regulations would ensure a less than significant impact related to water quality.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No Impact. A 100-year flood is a flood defined as having a 1.0 percent chance of occurring in any given year. Portions of the project site are located within areas designated as Other Areas Zone X on the Federal Emergency Management Agency flood insurance rate maps. The Other Areas Zone X designation indicates areas determined to be outside the 0.2 percent annual chance floodplain.[38] Therefore, the project site is not known to experience flooding and is not anticipated to flood in the future. Further, the proposed project does not include a residential component; therefore, it would not place housing within a 100-year flood hazard area. No impact would occur.

h) Place within a 100-year flood area structures to impede or redirect flood flows?

No Impact. As discussed above, the project area is designated as Other Areas Zone X, which indicates the area is determined to be outside the 100-year floodplain.[39] Additionally, the proposed pipeline would be located completely below ground surface with pavement on top. There would be no aboveground structures such that flood flows would be impeded or redirected. No impact to flooding would occur.

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 project site would not be located within a City-designated inundation area.[40] The proposed project involves installation of a public water distribution main within public roadways. Following completion of construction, the roadways would be returned to their original condition and the proposed pipeline would be located completely below ground surface with pavement on top. Additionally, no habitable structures are included as part of the proposed project. Therefore, implementation of the proposed project would not

[38] Federal Emergency Management Agency, Flood Insurance Rate Maps, Search by Street Address. Website: http://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1, accessed October 2, 2013.

[39] *Ibid*.

[40] City of Los Angeles Department of City Planning, Environmental and Public Facilities Maps, *Inundation and Tsunami Hazard Areas* Map, September 1, 1996.

expose people or structures to a significant risk of loss, injury or death involving flooding as a result of the failure of a levee or dam. The impact would be less than significant.

j) Inundation by seiche, tsunami, or mudflow?

Less Than Significant Impact. Seiches are oscillations generated in enclosed bodies of water usually as a result of earthquake-related ground shaking. A seiche wave has the potential to overflow the sides of a containing basin to inundate adjacent or downstream areas. As discussed above, the project area would not be located within any designated inundation areas. No impact would occur.

Tsunamis are large ocean waves caused by the sudden water displacement that results from an underwater earthquake, landslide, or volcanic eruption. Tsunamis affect low-lying areas along the coastline. The Santa Monica Mountains separate the project site from the Pacific Ocean. Accordingly, the project site is not located within a designated Tsunami Hazard Area.[41]

As discussed in Section VI(a)(iv) above, no portion of the project site is located within a City-designated hillside area. The project site would not be subject to a landslide.

Therefore, construction of the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow. No impact would occur.

X. LAND USE AND PLANNING

Would the project:

a) Physically divide an established community?

No Impact. The proposed project would not physically divide an established community. The proposed pipeline alignment would be located entirely within existing roadways. Following installation of the replacement pipeline, the roadways would be returned to their existing condition. No streets or sidewalks would be permanently closed as a result of the proposed project, and no separation of uses or disruption of access between land use types would occur. As such, the proposed project would not physically divide an established community, and no impact would occur.

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?

No Impact. The proposed pipeline alignment would be located entirely within existing roadways. The proposed project would serve existing uses along the alignment and would not conflict with the zoning or land use designations of such uses. Therefore, implementation of the proposed project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over

[41] *Ibid*.

the project adopted for the purpose of avoiding or mitigating an environmental effect. No impact would occur.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. The proposed pipeline alignment would be located entirely within an urbanized area within existing public roadways. There are no adopted habitat conservation plans that apply to the project area. In addition, the proposed pipeline alignment is not located in or near any natural community conservation plan areas (refer to Section IV[f] above). Therefore, the proposed project would not conflict with any such plan. No impact would occur.

XI. MINERAL RESOURCES

Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. The proposed pipeline alignment does not pass through City-designated Mineral Resource Zone Areas, which are areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists.[42] However, according to the State of California Department of Conservation, Division of Oil, Gas, and Geothermal Resources, several wells are known to exist within one mile of the proposed pipeline alignment.[43] However, no wells are located on the alignment itself.[44] Should any future mineral resource be discovered on or near the project site, implementation of the proposed project would not preclude the mineral's extraction. Therefore, the proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. No impact would occur.

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?

No Impact. The project site is not delineated as a locally-important mineral resource recovery site on any City plans.[45] Further, as discussed in Section XI(a) above, no active oil wells exist on the project site. Therefore, implementation of the proposed project would not result in the loss of availability of a locally-important mineral resource recovery site, and no impact would occur.

---

42 City of Los Angeles Department of City Planning, Environmental and Public Facilities Maps, *Areas Containing Significant Mineral Deposits* Map, September 1996.

43 State of California Department of Conservation, Division of Oil, Gas, and Geothermal Resources, DOGGR Online Mapping System. Website: http://maps.conservation.ca.gov/doms/doms-app.html, accessed October 1, 2013.

44 *Ibid*.

45 City of Los Angeles Department of City Planning, Environmental and Public Facilities Maps, Oil Field & Oil Drilling Areas Map, September 1, 1996.

XII. NOISE

Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of applicable standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact with Mitigation Incorporated. A significant impact would occur if the proposed project would expose persons to or generate noise levels in excess of standards established in the local general plan, noise ordinance, or other applicable standards. The City of Los Angeles regulates noise through several sections of its municipal code. These include Section 41.40, which establishes time prohibitions on noise due to construction activity, Section 112.04, which prohibits the use of loud machinery and/or equipment within 500 feet of residences, and Section 112.05, which establishes maximum noise levels for powered equipment and powered hand tools. According to Section 41.40, no construction activity that might create loud noises in or near residential areas or buildings shall be conducted before 7:00 a.m. or after 9:00 p.m. on weekdays, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday or City holidays. The time restriction shall not apply to any person who performs the construction, repair or excavation work involved pursuant to the express written permission of the Board of Police Commissioners through its Executive Director. The Executive Director, on behalf of the Board, may grant this permission, upon application in writing, where the work proposed to be done is in the public interest, or where hardship or injustice, or unreasonable delay would result from its interruption during the hours mentioned above, or where the building or structure involved is devoted or intended to be devoted to a use immediately related to public defense.

Existing Noise Levels

The proposed project would pass through land uses sensitive to increased noise levels, which include churches, residences, medical offices, early childhood education centers, and a hospital. Sensitive receptors located within 500 feet of the proposed pipeline alignment include the following:

- Northridge Hospital Medical Center (18300 Roscoe Boulevard)
- Medical offices located along Roscoe Boulevard
- Bright Horizons Child Center (18460 Cantara Street)
- New Horizon Foursquare Church (8055 Reseda Boulevard)
- LIFEhouse Church and Christian Preschool (18355 Roscoe Boulevard)
- Multi-family residences located along Reseda Boulevard
- Single- and multi-family residences along Strathern Street
- Single-family residences along Etiwanda Avenue
- Single- and multi-family residences along Cantara Street

The existing noise environment is characterized by vehicular traffic on local roadways and noises typical of a dense urban area. Activity associated with the Northridge Hospital Medical Center (e.g., sirens) is also a key contributor to the existing noise environment. Ambient noise monitoring was performed using a

SoundPro DL Sound Level Meter between 10:00 a.m. and 1:00 p.m. on September 19, 2013. As shown in Table 4, the community noise equivalent level (L_{eq}) along Reseda Boulevard was identified as 66.8 dBA L_{eq}. The ambient noise level along Roscoe Boulevard in front of the Northridge Hospital was identified as 68.5 dBA L_{eq}. The daytime noise levels along other portions of the proposed pipeline alignment ranged from 58.9 to 60.3 dBA L_{eq}.

Table 4 Existing Noise Levels

Noise Monitoring Location	Noise Level (dBA, L_{eq})
Reseda Boulevard between Roscoe Boulevard and Strathern Street	66.8
Strathern Street between Reseda Boulevard and Etiwanda Avenue	59.5
Etiwanda Avenue between Lorne and Cantara Streets	60.3
Cantara Street between Darby Lane and Darby Place	58.9
Roscoe Boulevard between Reseda Boulevard and Etiwanda Avenue	68.5

Source: Terry A. Hayes Associates, 2013.

Construction Noise

Generally, in accordance with the Noise Ordinance, construction activity would occur Monday through Friday from 7:00 a.m. to approximately 3:30 p.m. Construction work may also occur on Saturday, but it would not commence before 8:00 a.m., and it would cease by 6:00 p.m. No construction work would occur on Sundays or City holidays. According to Section 112.05 of the Los Angeles Municipal Code, powered equipment and hand tools may not produce a maximum noise level exceeding 75 dBA at a distance of 50 feet. However, this noise limitation does not apply where compliance is technically infeasible, including mufflers or other noise reduction devices. Table 5 shows the noise level ranges for the types of equipment that would be used during construction of the proposed project. Equipment noise levels would typically be greater than 75 dBA L_{eq} at 50 feet.

Table 5 Construction Equipment Noise Level Ranges

Construction Equipment	Noise Level at 50 feet (dBA, L_{eq})
Backhoe	73-95
Paver	85-88
Concrete Mixers	75-88
Crane (derrick)	86-89
Generators	71-83
Air Compressors	75-87

Source: City of Los Angeles*, L.A. CEQA Thresholds Guide*, 2006.

Noise from construction activity would affect the areas immediately adjacent to the construction zone, specifically areas that are less than 500 feet from activity. As shown in Table 5 above, the construction equipment could generate instantaneous noise levels up to 95 dBA at 50 feet. However, the City of Los Angeles has indicated that construction activity involving multiple pieces of equipment typically generate an average noise level of 89 dBA at 50 feet.

Construction equipment noise levels would exceed the 75 dBA at 50 feet noise limitation listed in Section 112.05 of the Los Angeles Municipal Code. This code section which explicitly addresses noise from construction equipment requires that all feasible measures be implemented. Taken together, mitigation measures N-1 through N-9 are feasible measures to control noise levels, including engine mufflers and noise blanket barriers. The City of Los Angeles has indicated that mufflers typically reduce aggregate equipment noise levels by approximately 3 dBA. Equipment noise would be approximately 86 dBA at 50 feet after engine muffling (mitigation measure N-1). The other mitigation measures, while difficult to quantify, would also reduce and/or control construction noise levels.

Additional mitigation measures were considered to reduce noise levels but were determined to be infeasible. These include:

- Electric Equipment - Electric equipment would generate less noise than diesel equipment but is not widely available and the horsepower associated with electric equipment would not meet project requirements.

- Relocation - Removing the affected land uses from the construction zone would eliminate the impact. This measure would not be feasible due to the number of affected land uses and associated cost of relocation. In addition, it would not be possible to relocate the Northridge Hospital Medical Center.

Implementation of Mitigation Measures N-1 through N-9 would reduce equipment engine noise levels by approximately 3 dBA. With implementation of feasible mitigation measures, construction activity would result in a less than significant noise impact.

Operational Noise

Upon completion of the proposed pipeline, the proposed project would not include new operational activities. Therefore, no impacts related to operational noise would occur.

Mitigation Measures

N-1 All construction equipment shall be properly maintained and equipped with mufflers and other suitable noise attenuation devices.

N-2 LADWP shall endeavor to use rubber-tired equipment rather than track equipment. Noisy equipment shall be used only when necessary and shall be switched off when not in use.

N-3 LADWP shall ensure that all stockpiling and vehicle staging areas are located away from noise-sensitive receivers.

N-4 LADWP shall establish a public liaison for project construction that shall be responsible for addressing public concerns about construction activities, including excessive noise. The liaison shall determine the cause of the

concern (e.g., starting too early, bad muffler, etc.) and shall work with LADWP to implement reasonable measures to address the concern.

N-5 LADWP shall develop a construction schedule to ensure that the construction would be completed quickly to minimize the time a sensitive receptor would be exposed to construction noise.

N-6 Construction supervisors shall be informed of project-specific noise requirements, noise issues for sensitive land uses adjacent to the pipeline route, and/or equipment operations.

N-7 Prior to construction work, the public shall be notified of the location and dates of construction. Residents shall be kept informed of any changes to the schedule.

N-8 Haul routes shall be on major arterial roads within non-residential areas. If not feasible, haul routes shall be reviewed and approved by LADOT before the haul route can be on major arterial roads in residential areas.

N-9 LADWP engineering and construction shall coordinate with the site administrator for the Northridge Hospital Center Medical Center, Bright Horizons Child Center, New Horizon Foursquare Church, and LIFEhouse Church and Christian Preschool to discuss construction activities that generate high noise levels. Coordination between the site administrator and LADWP shall continue on an as-needed basis. Additionally, LADWP water department shall perform outreach with the Reseda Neighborhood Council.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact. A significant impact would occur if the proposed project would cause excessive vibration levels. Vibration levels rarely affect human health. Instead, most people consider vibration to be an annoyance that may affect concentration or disturb sleep. In addition, high levels of vibration may damage fragile buildings. The peak particle velocity is most frequently used to describe vibration impacts to buildings and is measured in inches per second.

Heavy trucks can generate groundborne vibrations that vary depending on vehicle type, weight, and pavement conditions. As heavy trucks typically operate on major streets, existing groundborne vibration in the project vicinity is largely related to heavy truck traffic on the surrounding roadway network. Based on field visits, vibration levels from adjacent roadways are not perceptible along the proposed pipeline alignment.

Construction Vibration

Construction activity can result in varying degrees of vibration, depending on the equipment and methods employed. Operation of construction equipment causes vibrations that spread through the ground and diminish in strength with distance. Standard construction equipment (e.g., a back hoe) generates vibration levels of approximately 0.089 inches per second at 25 feet. Table 6 presents typical

vibration levels for such equipment at 12 to 150 feet. Other equipment used during construction activity, such as jackhammers, would generate less vibration than presented for a back hoe.

Table 6 Vibration Velocities for Construction Equipment

Distance from Equipment (feet)	Peak Particle Velocity (inches/second)
12	0.268
15	0.191
20	0.124
25	0.089
50	0.031
75	0.017
100	0.011
125	0.008
150	0.006

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006.

The Federal Transit Administration has indicated that engineered concrete and masonry buildings can be exposed to vibration levels up to 0.3 inches per second, non-engineered timber and masonry buildings can withstand vibration levels up to 0.2 inches per second, and buildings extremely susceptible to vibration (e.g., historical buildings) can withstand vibrations up to 0.12 inches per second before experiencing damage. In accordance with Federal Transit Administration criteria, vibration is a function of the distance of the receiver from the vibration source (i.e., construction equipment or automobiles). As shown in Table 6, vibration dissipates rapidly with distance. Construction-related building damage could occur when construction equipment would be located within 15 feet of residential or institutional buildings or 12 feet of commercial buildings. Based on the proposed alignment, it is not anticipated that construction equipment would be located within 15 feet of residential or institutional buildings or 12 feet of commercial buildings. In addition, although the proposed project alignment would parallel two resources that are historic in age, including commercial buildings located near the intersection of Roscoe and Reseda Boulevards and the Northridge Hospital Medical Center, no direct or indirect impacts to these resources would occur as a result of the proposed project. Therefore, impacts related to construction vibration would be less than significant.

Operational Vibration

Upon completion of the proposed pipeline, the proposed project would not include new operational activities. Therefore, no impacts related to operational vibration would occur.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

No Impact. A significant impact would occur if the proposed project would cause a substantial permanent increase in noise levels above existing ambient levels. As discussed in Section XII(a) above, operation of the proposed project would create no new permanent sources of noise. Additionally, following installation of the pipelines, the roadways would be returned to their existing conditions. As such, operational activities would be the same as current levels. Therefore, the proposed

project would not create a substantial permanent increase in noise levels above existing ambient levels. No impact would occur.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant Impact with Mitigation Incorporated. A significant impact would occur if the proposed project would result in a substantial temporary or periodic increase in ambient noise levels. As discussed in Section XII(a) above, construction activities would result in temporary increases in noise levels at the project sites. With implementation of mitigation measures N-1 through N-9, construction noise impacts would be less than significant.

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. A significant impact would occur if the proposed project would expose people residing or working in the project area to excessive noise levels from a public airport or public use airport. The proposed project is located approximately 2.1 miles east of the Van Nuys Airport. The project area is outside the 65-dBA Community Noise Equivalent Level contour, which is typically utilized as the zone of noise influence for airports. Therefore, construction workers would not be exposed to excessive airport-related noise. Furthermore, the project would include no occupied facilities that would expose people to excessive noise levels related to aircraft use. Therefore, no impacts related to exposing people working or residing in the project area to excessive noise levels from a public airport or public use airport would occur.

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

No Impact. A significant impact would occur if the proposed project would expose people residing or working in the project area to excessive noise levels from a private airstrip. The project area is not located within ten miles of a private airstrip, and noise levels generated at private airports are not audible at the project sites. Furthermore, the proposed project would include no occupied facilities that would expose people to excessive noise levels related to aircraft use. Therefore, no impact related exposing people residing or working in the project area to excessive noise levels from a private airstrip would occur.

XIII. POPULATION AND HOUSING

Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. The proposed project does not include construction or operation of any residential or commercial land uses and, therefore, would not result in a direct population increase from construction of new homes or businesses. The proposed

project would replace an existing public water distribution main in portions of Roscoe Boulevard, Reseda Boulevard, Etiwanda Avenue, Cantara Street, and Strathern Street with ERDIP. The existing pipeline is proposed to be replaced due to the age of the pipe and because the area experienced substantial ground failures during the Northridge Earthquake, to maintain system reliability and continued service to the Northridge Hospital Medical Center. Therefore, the proposed project would not result in indirect population growth. No impact to population growth would occur.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. All construction activity would occur in the existing road right-of-way and the roadways would be restored to their original condition following replacement of the pipeline. Therefore, the proposed project would not require the removal of existing housing. Implementation of the proposed project would not impact the number or availability of existing housing in the area and would not necessitate the construction of replacement housing elsewhere. No impact to housing would occur.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. As discussed in Section XIII(b) above, construction would occur within existing roadways. Thus, there are currently no residential uses on the project site, and no persons would be displaced as a result of implementation of the proposed project. Construction of replacement housing would not be necessary, and no impact would occur.

XIV. PUBLIC SERVICES

a) 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. Fire protection services in the City are provided by LAFD. There are several LAFD fire stations serving the project area. As the proposed project would serve existing customers, it would not generate population growth. Furthermore, no new habitable structures would be built as part of the proposed project. Therefore, construction and operation of the proposed project would not require the construction of additional fire protection services or facilities or expansion of existing facilities.

As discussed in Section VIII(h) above, the proposed alignment is not located within any lands designated as Wildfire Hazard Areas or a Fire Buffer Zone. Therefore, construction activities would not occur within an area designated with a substantial fire risk.

Fire protection could be required at the project 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 accidental fire to occur. Therefore, the service capacity of local fire stations in which accidents could happen would not be adversely impacted by the proposed project.

Installation of the proposed pipeline would require temporary lane closures during the construction period, which could affect response times and emergency access. However, it is not anticipated that full roadway closures would be necessary and the operation of existing roadways would be preserved throughout construction. More specifically, access to the Northridge Hospital Medical Center would remain unobstructed as project construction along Cantara Street would be limited to the south side of the street opposite the driveways to the medical center's Emergency/Trauma Center. Vehicular access to intersecting streets would be limited during portions of the construction period. However, construction would occur in approximately 75-foot segments, and no portion of the roadway would remain closed during the entire construction period. Additionally, it is anticipated that lane closures would be effective and access would be restricted during working hours only and would reopen at the end of each work day. Recessed steel plates would be used to cover any open trenches during non-work hours. Furthermore, LADWP would consult with LAFD and the medical center regarding construction schedules and worksite traffic control and detour plans. Development of such plans and consultation with LAFD and medical center would ensure that impacts related to emergency response and access to the adjacent Northridge Hospital Medical Center during construction would be less than significant.

ii) Police protection?

Less Than Significant Impact. The City of Los Angeles Police Department (LAPD) is the local law enforcement agency responsible for providing police protection services in the City. Several LAPD community police stations serve the areas through which the proposed project would pass. As previously stated, the proposed project would not generate population growth. Therefore, implementation and operation of the proposed project would not require the construction of additional police protection services or facilities or expansion of existing police facilities.

As discussed in Section XIV(a)(i) above, installation of the proposed pipeline would require temporary lane closures during the construction period, which could have an impact on response times and emergency access. However, full roadway closures are not anticipated and any open trenches would be covered with steel plates during non-work hours. Furthermore, LADWP would consult with LAPD regarding construction schedules and worksite traffic control and detour plans. Development of such plans and consultation with LAPD would ensure that impacts related to emergency response and access during construction would be less than significant.

iii) Schools?

No Impact. The proposed project involves replacement of an existing public water distribution main in portions of Roscoe Boulevard, Reseda Boulevard, Etiwanda Avenue, Cantara Street, and Strathern Street with ERDIP. The existing distribution main would be replaced due to the age of the pipe and because the area experienced substantial ground failures, to maintain system reliability. As the proposed project does not include development of any residential uses, no increase in residential population would occur. Additionally, as the proposed project would serve existing customers, no housing or employment opportunities would be provided by the proposed project. Therefore, no indirect population growth would occur. No new students would be generated, and no increase in demand for local schools would result. No impact to schools would occur.

iv) Parks?

No Impact. Residential developments typically have the greatest potential to result in impacts to parks since these types of developments generate a permanent increase in residential population. As previously stated, the proposed project does not include development of any residential uses and would not generate any new permanent residents that would increase the demand for local and regional park facilities. Therefore, no impact to parks would occur.

v) Other public facilities?

No Impact. The proposed project does not include development of residential or commercial uses and would not increase the demand for other public facilities. The proposed project involves replacement of an existing public water distribution main in portions of Roscoe Boulevard, Reseda Boulevard, Etiwanda Avenue, Cantara Street, and Strathern Street with ERDIP. The proposed project would not result in indirect population growth, which could increase demand for other public facilities. No impact to other public facilities would occur.

XV. RECREATION

Would the project:

a) 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 proposed project involves replacement of an existing public water distribution main in portions of Roscoe Boulevard, Reseda Boulevard, Etiwanda Avenue, Cantara Street, and Strathern Street with ERDIP. Neither construction nor operation of the proposed project would generate new permanent residents that would increase the use of existing parks and recreational facilities. Therefore, substantial physical deterioration of these facilities would not occur or be accelerated with implementation of the proposed project. No impact would occur.

b) Include recreational facilities or require construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. The proposed project does not include development of any residential uses and, thus, would not generate new permanent residents that would increase the demand for recreational facilities. Further, the proposed project would serve existing customers and would not promote or indirectly induce new development that would require the construction or expansion of recreational facilities. Therefore, no impact would occur.

XVI. TRANSPORTATION/TRAFFIC

Would the project:

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

Less Than Significant Impact with Mitigation Incorporated. This section evaluates the existing and future (cumulative) traffic conditions surrounding each segment of the proposed project and potential impacts to the study roadway segments associated with implementation of the proposed project. A copy of the traffic study by is included as Appendix D of this document.

Construction Traffic

The traffic analysis focuses on the construction period of the proposed project as post-construction operations would not generate significant levels of daily traffic and only routine maintenance activities would be required during post-construction operations. Traffic impacts are identified if a proposed development would result in a significant change in traffic conditions at a study intersection or roadway segment.

Selected intersections and roadway segments were analyzed along the construction route. Roadway intersections were analyzed for approach lane reductions and removals due to designated construction-related work areas and necessary diversions during trenching activities adjacent to or within the intersection. Roadway segments were examined for similar travel lane reductions.

The following five intersections were analyzed for the proposed project:

1. Reseda Boulevard/Roscoe Boulevard
2. Reseda Boulevard/Cantara Street
3. Reseda Boulevard/Strathern Street
4. Etiwanda Avenue/Roscoe Boulevard
5. Etiwanda Avenue/Strathern Street

The following seven roadway segments were analyzed for the proposed project:

A. Roscoe Boulevard, between Reseda Boulevard and Etiwanda Avenue
B. Reseda Boulevard, between Roscoe Boulevard and Cantara Street
C. Reseda Boulevard, between Cantara Street and Strathern Street
D. Cantara Street, between Reseda Boulevard and Etiwanda Avenue
E. Etiwanda Avenue, between Roscoe Boulevard and Cantara Street
F. Etiwanda Avenue, between Cantara Street and Strathern Avenue
G. Strathern Street, between Reseda Boulevard and Etiwanda Avenue

The analysis included collection of baseline traffic data for existing conditions; analysis of existing, existing-with-construction, and future with-construction conditions; identification of significant impacts and other circulation issues; and development of recommendations for mitigation. Existing baseline traffic data was collected on Wednesday August 28, 2013 during the peak-periods of 7:00 a.m. to 10:00 a.m. and 3:00 p.m. to 6:00 p.m. Weekday traffic turn movement counts were conducted at five signalized study intersections and daily volume counts were conducted at seven study area roadway segments. The study analysis periods were based on existing conditions (the time when the traffic counts were conducted) and the future analysis year or assumed peak-year of construction of the proposed project. The future analysis period was defined as the year 2015, the latest year of the project construction period.

Construction of the proposed project would result in temporary, localized increases in traffic volumes associated with construction activities and temporarily reduced roadway capacities during brief periods of time in the area in which construction is occurring. The proposed project would potentially conflict with the City of Los Angeles Mayor's Directive #2, which prohibits construction on major roads during rush hour periods (6:00 a.m. to 9:00 a.m. and 3:30 p.m. to 7:00 p.m.), if construction takes place during these times. As part of the variance to the Directive and to minimize traffic-related impacts during construction, detailed traffic control/handling plans would be prepared and subject to LADOT approval.

No complete street closures are anticipated during project construction. Existing on-street parking areas along the proposed pipeline alignment would be utilized as travel lanes to minimize traffic lane closures during construction, as necessary. Further, each roadway segment would be affected only as construction occurs on that segment, not for the duration of the construction period.

To determine the impacts of peak construction activity on the roadway system, construction generated traffic was added to existing traffic (year 2013), traffic generated by other projects in the surrounding area, and ambient (background) growth in traffic volumes to determine future (year 2015) plus project conditions. Impact thresholds defined by LADOT were not used for the proposed project traffic analysis. These standards define significant impacts to long-term traffic operations. Construction of the proposed project would temporarily constrict roadway capacity in affected segments, as the pipeline trench would be returned to its existing condition and roadway operations fully restored following completion of construction activities within a segment. Thus, the impact analysis is based on roadway flow during construction and the generalized application of volume-to-capacity (V/C) calculations and levels of service (LOS). The concept of LOS for

roadway segments is typically defined in terms of average travel speed of all vehicles on the facility. Average travel speed is strongly influenced by the density of signalized intersections per mile, average intersection delay, the number of driveways per segment and the presence of on-street parking. LADOT level of service definitions are provided in Table 7.

Table 7 Level of Service Definitions

LOS	Signalized Intersection V/C (CMA)	Stop-Controlled Intersection Average Stop Delay per Vehicle (Sec/Veh) (HCM)	Definition
A	0.000 – 0.600	≤10	Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.
B	0.601 – 0.700	>10 – 15	Very good operation. Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow. An approach to an intersection may occasionally be fully utilized and traffic queues start to form.
C	0.701 – 0.800	>15 – 25	Good operation. Occasionally, backups may develop behind turning vehicles. Most drivers feel somewhat restricted.
D	0.801 – 0.900	>25 – 35	Fair operation. There are no long-standing traffic queues. This level is typically associated with design practice for peak periods.
E	0.901 – 1.000	>35 – 50	Poor operation. Some long-standing vehicular queues develop on critical approaches
F	Greater than 1.000	>50	Forced flow. Represents jammed conditions. Backups from locations downstream or on the cross street may restrict or prevent movements of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop-and go type traffic flow.

Source: Transportation Research Board, Washington D.C., Highway Capacity Manual, Special Report 209, 2000, and Interim Materials on Highway Capacity, NCHRP Circular 212, 1982.

A significant traffic impact is typically identified if project-related traffic would cause service levels to deteriorate beyond a threshold limit specified by the overseeing agency. Impacts can also be significant if a facility is already operating below the acceptable level of service and project traffic will cause a further decline below a threshold.

LADOT has established specific thresholds for project-related increases in the V/C of signalized study intersections, as shown in Table 8. The following increases in peak-hour V/C ratios are considered significant impacts:

Table 8 LADOT Significance Thresholds for Increases in Peak-Hour V/C Ratios

Level of Service	V/C	Project Related V/C increase
C	< 0.70 – 0.80	Equal to or greater than 0.040
D	< 0.80 – 0.90	Equal to or greater than 0.020
E and F	0.90 or more	Equal to or greater than 0.010

Source: KOA Corporation, 2013.

These incremental impact thresholds were applied where a roadway segment was forecasted to operate at LOS E or F and lane reductions would not be required. Otherwise, roadway segment and unsignalized intersection impacts were generally determined based on changes in peak-hour level of service values to E or F due to project construction. Study area traffic operations for the construction of the proposed project are discussed below, along with significant impact determinations.

The future traffic conditions without and with peak construction traffic generated by the proposed project at the study intersections and study roadway segments are shown in Tables 9 and 10, respectively. As shown in Table 9, construction of the proposed project would worsen operations to or within LOS E or F at three of the five study intersections:

- Reseda Boulevard/Roscoe Boulevard – Operations would worsen from LOS D to F in the a.m. and p.m. peak hours.
- Reseda Boulevard/Cantara Street – Operations would worsen from LOS D to E in the a.m. peak hour and would worsen within LOS E in the p.m. peak hour.
- Etiwanda Avenue/Roscoe Boulevard – Operations would worsen from LOS B to F in the a.m. peak hour and would worsen from LOS A to F in the p.m. peak hour.

The construction impacts to traffic at the three study intersections would be significant but temporary. The Reseda Boulevard/Strathern Street and Etiwanda Avenue/Strathern Street intersections would not be impacted, as LOS values would remain at LOS D or better. Implementation of mitigation measure TR-1 below is required to reduce the impacts to the three study intersections to less than significant levels.

Table 9 Future Without and With Project Conditions – Peak Hour Level of Service (2015)

#	Study Intersections	Future 2015 without Project				Future 2015 with Project				Change in V/C		Significant Impact?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour				
		V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	AM Peak Hour	PM Peak Hour	
1	Reseda Blvd. & Roscoe Blvd.	0.855	D	0.823	D	1.484	**F**	1.484	**F**	0.573	0.661	**Yes**
2	Reseda Blvd. & Cantara St.	34.5	D	36.9	**E**	43.7	**E**	45.5	**E**	9.2	8.6	No
3	Reseda Blvd. & Strathern St.	0.501	A	0.435	A	0.772	C	0.784	C	0.271	0.349	**Yes**
4	Etiwanda Ave. & Roscoe Blvd.	0.626	B	0.548	A	1.188	**F**	1.282	**F**	0.562	0.734	**Yes**
5	Etiwanda Ave. & Strathern St.	10.4	B	8.9	A	10.4	B	8.9	A	0.0	0.0	No

Source: KOA Corporation, 2013.

Table 10 Peak Hour Study Roadway Segment Impacts

	Street Segments	Peak Period	Base Volumes				Proposed Project		Significant Impact?
			Existing		Future Base		Future with Project		
			V/C	LOS	V/C	LOS	V/C	LOS	
A	Roscoe Blvd.	AM	0.751	C	0.771	C	1.288	**F**	**Yes**
	Between Reseda Blvd. and Etiwanda Ave.	PM	0.624	B	0.641	B	0.964	**E**	
B	Reseda Blvd.	AM	0.650	B	0.687	B	0.920	**E**	**Yes**
	Between Roscoe Blvd. and Cantara St.	PM	0.704	C	0.743	C	0.994	**E**	
C	Reseda Boulevard	AM	0.604	B	0.641	B	0.858	**D**	**Yes**
	Between Cantara St. and Strathern Ave.	PM	0.701	C	0.739	C	0.989	**E**	
D	Cantara St.	AM	0.181	A	0.184	A	0.096	A	No
	Between Reseda Blvd. and Etiwanda Ave.	PM	0.167	A	0.170	A	0.089	A	
E	Etiwanda Ave.	AM	0.433	A	0.442	A	0.225	A	No
	Between Roscoe Blvd. and Cantara St.	PM	0.393	A	0.401	A	0.204	A	
F	Etiwanda Ave.	AM	0.260	A	0.265	A	0.136	A	No
	Between Cantara St. and Strathern Ave.	PM	0.223	A	0.227	A	0.117	A	
G	Strathern Ave.	AM	0.330	A	0.349	A	0.178	A	No
	Between Reseda Blvd. and Etiwanda Ave.	PM	0.233	A	0.250	A	0.129	A	

Source: KOA Corporation, 2013.

Similarly, as shown in Table 10, the construction impacts to traffic along three of the seven study roadway segments would be significant but temporary.

- Roscoe Boulevard between Reseda Boulevard and Etiwanda Avenue – Operations would worsen from LOS C to F in the a.m. peak hour and would worsen from LOS B to LOS E in the p.m. peak hour.
- Reseda Boulevard between Roscoe Boulevard and Cantara Street – Operations would worsen from LOS B to E in the a.m. peak hour and would worsen from LOS C to LOS E in the p.m. peak hour.
- Reseda Boulevard between Cantara Street and Strathern Avenue – Operations would worsen from LOS B to D in the a.m. peak hour and would worsen from LOS C to LOS E in the p.m. peak hour.

Implementation of mitigation measures TR-2 through TR-4 is required to reduce the impacts to the extent feasible with reduced capacity provisions of the three study roadway segments to less than significant levels.

Mitigation Measures

TR-1 The intersections of Reseda Boulevard/Roscoe Boulevard, Reseda Boulevard/Cantara Street, and Etiwanda Avenue/Roscoe Boulevard shall remain open during the a.m. and p.m. peak periods. Construction work shall only occur during off-peak periods.

TR-2 LADWP, prior to the start of construction, shall coordinate with LADOT to prepare a construction TMP. The plan shall include, at a minimum, signage along all construction corridors in advance of the start of construction, warning of potential delays once construction starts. In addition, the TMP shall include signage to alert motorists to temporary or limited access points to adjacent properties; appropriate barricades for road closures; construction speed limit signage along the haul route; and parking restrictions during construction.

TR-3 LADWP shall coordinate with LADOT to develop a detour plan, including identification of wayfinding signage locations to encourage traffic diversions for through traffic to multiple parallel routes.

TR-4 Traffic shall be controlled during construction by adhering to the guidelines contained in Standard Specifications for Public Works Construction used by many municipalities in California and Caltrans' Traffic Manual, Chapter 5, "Manual of Traffic Controls for Construction and Maintenance Work Zones" and applicable City requirements. These guidelines provide methods to minimize construction effects on traffic flow.

Operation

Operation of the proposed project would not cause any increase in traffic in relation to the existing traffic load and capacity of the street system. Following completion of construction, the proposed project would not generate additional traffic. Therefore, the proposed project would not result in permanent impacts to traffic.

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

No Impact. The Congestion Management Program (CMP) was created statewide because of Proposition 111. The CMP for Los Angeles County requires the analysis of the traffic impacts of individual development projects with potentially regional significance. A specific system of arterial roadways plus all freeways comprises the CMP system. In conformance with CMP Transportation Impact Analysis Guidelines, a traffic impact analysis is conducted at:

- CMP arterial monitoring intersections, including freeway on-ramps or off-ramps, where the proposed project would add 50 or more vehicle trips during either morning or afternoon weekday peak hours.

- CMP mainline freeway-monitoring locations, where the project would add 150 or more trips, in either direction, during the either the morning or afternoon weekday peak hours.

Truck trips within the totals presented below have been adjusted by a passenger-car equivalent factor of 2.5. Construction employee vehicle trips have also been included.

Impacts to CMP Arterials

The nearest CMP monitoring location to the study area is Victory Boulevard at Reseda Boulevard, which is located approximately one mile south of the project site. Based on the trip generation and distribution of project-related trips, it is not expected that 50 or more construction project trips would be added to the nearby CMP intersections. Therefore, the proposed project would not conflict with the CMP for Los Angeles County, and no impact would occur.

Impacts to CMP Freeways

The nearest CMP mainline freeway-monitoring locations to the project site are on the U.S. 101 at Winnetka Avenue and Interstate 405 (I-405) north of Roscoe Boulevard. The proposed project is expected to add less than 150 construction trips per hour, in either direction, to any freeway segment. Therefore, the proposed project would not conflict with the CMP for Los Angeles County, and no impact would occur.

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?

No Impact. The proposed project would not result in a change in air traffic patterns. Construction and operation of the proposed project would not generate air traffic. Further, the proposed project would not include any high-rise structures that could act as a hazard to aircraft navigation. No impact would occur.

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

No Impact. The proposed project would be constructed within existing roadways. No design changes to the existing roadways or use of roadways would occur. Therefore, no impact related to an increase in hazards due to a design feature or incompatible uses would occur.

e) Result in inadequate emergency access?

Less Than Significant Impact. Installation of the proposed replacement pipeline would require temporary lane closures during the construction period, which could have an effect on emergency access. Additionally, emergency services may be needed at a location where access is temporarily blocked by the construction zone. However, it is not anticipated that full roadway closures would be necessary and the operation of existing roadways would be preserved throughout construction. More specifically, access to the Northridge Hospital Medical Center would remain unobstructed as project construction along Cantara Street would be limited to the south side of the street opposite the driveways to the medical center's Emergency/Trauma Center. Vehicular access to intersecting streets would be limited during portions of the construction period. However, construction would occur in approximately 25-foot segments per day and no portion of the roadway would remain closed during the entire construction period. Additionally, it is anticipated that lane closures would be effective and access would be restricted during working hours only and would reopen at the end of each work day. Recessed steel plates would be used to cover any open trenches during non-work hours. Furthermore, LADWP would consult with emergency service providers (e.g., LAPD, LAFD, etc.) and the Northridge Hospital Medical Center regarding construction schedules and worksite traffic control and detour plans. Development of such plans and consultation with emergency service providers and the medical center would ensure that impacts related to emergency response and access to the adjacent Northridge Hospital Medical Center during construction would be less than significant.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Less Than Significant Impact with Mitigation Incorporated. Construction activities would require the closure of one or two travel lanes and on-street parking. Construction activities are also anticipated to temporarily affect public transit, bicycle, or pedestrian facilities.

Public transportation may be impacted as a result of construction because project construction activities may require the use of existing bus stop curb lane areas. Impacts to transit service would be likely along project segments during construction. Temporary stop relocations/closures would likely be necessary based on the roadway width needed for project construction. Implementation of mitigation measure TR-5 is required to reduce impacts on transit service to less than significant levels.

Reseda Boulevard currently contains bike lanes along this portion of the proposed pipeline alignment. Additionally, the City of Los Angeles 2010 Bike Plan proposes bikeways along Roscoe Boulevard. If bikeways are provided prior to project construction, it is likely that the proposed project would include the closure of these lanes. As a result, construction activities would potentially create unsafe conditions for bicyclists under restricted capacity conditions. Therefore, these particular bicycle routes would be closed temporarily. To notify the public, signs would be posted at the next major intersections to the north and south of the construction area (see mitigation measure TR-2 above). Development of a TMP and detour plan would minimize impacts (see mitigation measures TR-2 and TR-3 above). With implementation of these mitigation measures, impacts to bicycle facilities would be reduced to a less than significant.

Construction of the proposed project could potentially impact pedestrian movements on sidewalks and at crosswalk locations. Implementation of mitigation measure TR-6 is required to reduce impacts on pedestrian facilities to less than significant levels.

No impacts to public transit, bicycle, or pedestrian facilities would occur during project operation.

TR-5 The TMP, as identified in TR-2, shall also be developed in consultation with local transit agencies to minimize impacts to passenger loading areas and travel times on scheduled transit routes. All affected transit agencies must be contacted to provide for any required modifications or temporary relocation of transit facilities. To the extent practicable, temporary bus stop closures would be accommodated with replacement bus stops outside the immediate work area. These temporary closures, however, would need to be located along wide portions of the roadway where the maximum number of travel lanes can be accommodated during construction.

TR-6 Marked pedestrian crosswalks at signalized intersection shall be maintained for the majority of the project construction duration. Any temporarily closed crosswalk locations shall be supplemented by a maintained crosswalk at the opposite leg of the intersection, especially when a school or transit stop is located nearby.

XVII. UTILITIES AND SERVICE SYSTEMS

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Less Than Significant Impact. The proposed project would replace an aging water distribution pipeline with ERDIP within the public roadway rights-of-way in the community of Reseda-West Van Nuys. As discussed above, a SWPPP and erosion control plan would be prepared for the proposed project that would specify appropriate BMPs to control runoff from the project site during construction. Additionally, any wastewater discharged by the proposed project must comply with National Pollution Discharge Elimination System permit requirements. Construction

activities would comply with all applicable Regional Water Quality Control Board wastewater treatment requirements. The construction impact would be less than significant.

During project operation, the proposed earthquake resistant pipeline would be located entirely below ground. There would be no wastewater to be discharged. No impact to the wastewater treatment requirements would occur.

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?

No Impact. The proposed project would replace an aging water distribution pipeline with ERDIP within the public roadway rights-of-way in the community of Reseda-West Van Nuys. These improvements would not increase the amount of water used or wastewater generated at the project site, and the proposed project would serve existing customers in the community. The proposed project would maintain system reliability and service to the project area and the Northridge Hospital Medical Center. Thus, no new or expanded water or wastewater treatment facilities would be required due to implementation of the proposed project. No impact would occur.

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. The proposed project would replace an aging water distribution pipeline with ERDIP within the public roadway rights-of-way in the community of Reseda-West Van Nuys. As discussed in Section IX(e) above, all drainage flows would be routed through existing storm water infrastructure serving the project site and surrounding area. Additionally, following construction of the proposed project, all roadways would be returned to their existing conditions, and storm water flows would be similar to the current condition. Therefore, the proposed project would not require or result in the construction or expansion of storm water drainage facilities. The impact would be less than significant.

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

No Impact. High water demand is typically associated with residences, hotels, and large offices.[46] The proposed project would replace an aging water distribution main with ERDIP to maintain system reliability to existing LADWP customers. No extension of the existing infrastructure would be provided. Therefore, additional water supplies are not anticipated. No impact would occur.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. As discussed in Section XVII(d) above, the earthquake resistant pipelines would replace an existing, aging public water distribution main. Therefore,

[46] City of Los Angeles Bureau of Sanitation, *Sewer Generation Rates Table*, March 2002.

no additional demand for wastewater treatment would be created. No impact to wastewater treatment capacity would occur.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less Than Significant Impact. Construction activities would generate construction waste, such as demolition debris. As discussed in Section 1.7, proposed project construction would incorporate source reduction techniques and recycling measures and maintain a recycling program to divert waste in accordance with the Citywide Construction and Demolition Debris Recycling Ordinance. These measures would minimize the amount of construction debris generated by the proposed project that would need to be disposed of in an area landfill. Any non-recyclable construction waste generated would be disposed of at a landfill approved to accept such materials. The proposed project would not have an operational component. As such, no solid waste would be generated during project operation. The impact would be less than significant.

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

Less Than Significant Impact. The proposed project would comply with federal, state, and local statutes and regulations related to solid waste. As discussed in Section XVII(f) above, construction debris would be recycled or disposed of according to local and regional standards. All materials would be handled and disposed of in accordance with existing local, state, and federal regulations. Compliance with existing regulations would ensure a less than significant impact.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially 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 proposed project would be constructed entirely within existing roadways. No vegetation removal would occur, including sensitive vegetation communities or sensitive plant species. No impact to biological resources would occur.

As discussed in Section V(a) above, no historical resources are located within the proposed project alignment; therefore, no impacts related to such resources would occur. However, as discussed in Section V(b), it is possible that buried or otherwise obscured archaeological resources may be present within the proposed project alignments and may be encountered during ground disturbing activities for the proposed project. If archaeological resources are encountered during ground disturbing activities, LADWP would comply with existing regulations including California Public Resource Code Section 21083.2(i), to ensure that impacts to

archaeological resources and Native American cultural resources would be less than significant.

b) Does the project have environmental effects that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Less Than Significant Impact with Mitigation Incorporated. As discussed in Section III(c) above, the proposed project is located within the Los Angeles County portion of the South Coast Air Basin, which is designated a non-attainment area for O_3, PM_{10}, and $PM_{2.5}$. In order to maintain attainment status of the Basin and comply with the State Implementation Plan, the SCAQMD has developed project-level thresholds of significance for criteria pollutants. The proposed project would not generate regional construction emissions in excess of the SCAQMD thresholds. Therefore, no cumulatively considerable impact would occur during construction. The proposed project does not include an operational component. Therefore, no cumulatively considerable air quality impact would occur during operations.

As discussed in Section VII(a) above, GHG emissions contribute to the global condition known as the greenhouse effect. Because this issue is by its very nature cumulative, CARB established a threshold of significance and climate reduction strategies. The proposed project would generate short-term emissions of GHGs during construction. However, these emissions would be far less than the thresholds of significance. The cumulative impact would be less than significant.

As discussed in Sections XII(c) and XII(d) above, the proposed project would not have an operational component. Project operations would be the same as existing conditions. Therefore, there would be no permanent or temporary increase in ambient noise levels, and the proposed project would not result in a cumulatively considerable noise impact.

As discussed in Section XVI(a) above, the cumulative traffic analysis considered the addition of background traffic growth and other proposed projects combined with project construction traffic. Construction activities would result in significant impacts on project area roadways. These impacts would be reduced to a less than significant level with implementation of mitigation measures TR-1 through TR-4. Therefore, the impact would not be cumulatively considerable.

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

Less Than Significant Impact with Mitigation Incorporated. As discussed in Section XVI(f) above, construction activities would potentially result in temporary sidewalk and bicycle lane closures and the temporary relocation of bus stops. These activities could pose a hazard to human beings during construction. Therefore, implementation of mitigation measures TR-5 and TR-6 is required to reduce the impact to a less than significant level.

SECTION 4
LIST OF PREPARERS

LEAD AGENCY

Los Angeles Department of Water & Power
111 N. Hope Street, Room 1044
Los Angeles, CA 90012

PREPARED BY

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

Charles C. Holloway, Manager of Environmental Planning and Assessment
David Porter, Environmental Project Manager

TECHNICAL ASSISTANCE PROVIDED BY

Melissa Hatcher, Project Director (AECOM)
Madonna Marcelo, Project Manager (AECOM)
Kathalyn Tung, Environmental Analyst (AECOM)
Stephanie Jow, Historic Archaeologist (AECOM)
Linda Kry, Archaeologist (AECOM)
Sam Silverman, Senior Environmental Scientist (Terry A. Hayes Associates)
Brian Marchetti, Senior Transportation Planner (KOA Corporation)
Bruce Chow, Senior Transportation Planner (KOA Corporation)

Page intentionally left blank

Appendix A
Construction Spreadsheet

PROJECT: RESEDA PIPELINE PILOT PROJECT

Work Schedule

Total footage of pipe (LF)	Pipe lay rate (LF/day)	Total days required to install pipe	Working days per year	Number of years required to install total pipe
6,500	25	260	240	1.1

Excavation of Soils

Total soil excavated incl. 20% expansion (ft^3)[1]	Soil hauled per day (ft^3/day)	Soil hauled per day (yd^3/day)	Maximum volume allowed in a 10-yd. Dump Truck (yd^3)	Number of loads (loads per day)	Number of 10 yd^3 Dump Trucks used	Round trips per truck
97,500	375	13.9	8.5	2	3	1

Dump Site Locations

NU-WAY 1270 Arrow HighWay Irwindale Ca. I -10 E 19.0 miles

Vulcan 11520 Sheldon St. Sun Valley Ca. I - 5 N (4.7 miles - 22.3 miles)

Construction Crew		Crew Equipment	
1-Supervisor	2-Operator	2-Pick-up Trk	1-Truck Mounted Crane
1-Sr.W.U.W.	3- H.D.T.O.	1-Gang Trk	1-Back Hoe W/ Carrier
2-W.U.W.	1-Field Engineer	1-5 yd^3 Dump Trk	1-Pipe Trk
2-M.C.H		3-10 yd^3 Dump Trk	

CNG
DIESEL
GAS

Trips per vehicle

Pick-up truck - varies

5 yd^3 dump truck - varies

Gang Trk - 1 trip to and from job

Pipe Truck - 1 trip to & from job

Backhow w/carrier - 1 trip to and from job

Truck mounted crane - 1 trip to and from job

10 $yard^3$ dump trucks - see round trips above

Best Management Practices

Geotextile Fabrics / sandbag on all storm drain catch basins opening

All spoils being transported covered with tarp

Comply with City approved traffic control plans

[1] *assumed a 2.5' wide x 5' deep trench*

Appendix B
Air Quality Technical Output

Air Quality Appendix

Construction Emissions

Estimated Offroad Equipment Emissions During Construction [1]

Construction Phase	Equipment Type	Qty	Operating Hrs/WD/ equipment	Operating Hrs per Day	Rog Rate (lbs/hr)	Rog (lbs/day)	CO rate (lbs/hr)	CO (lbs/day)	NOx rate (lbs/hr)	NOx (lbs/day)	SOx rate (lbs/hr)	SOx (lbs/day)	PM rate (lbs/hr)	PM (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)	CO_2 Rate (lbs/hr)	CO_2 (lbs/day)	CH_4 rate (lbs/hr)	CH_4 (lbs/day)
Trenching	Backhoe with Carrier	1	8	8	0.07	0.58	0.37	3.00	0.50	3.98	0.00	0.01	0.03	0.27	0.27	0.25	66.80	534.40	0.01	0.05
	Truck-Mounted Crane	1	4	4	0.25	0.99	0.83	3.32	2.25	8.99	0.003	0.01	0.08	0.32	0.32	0.30	303.04	1,212.18	0.02	0.09
Maximum Daily Construction Offroad Emissions						***1.58***		***6.32***		***12.97***		***0.02***			***0.59***	***0.55***		***1746.58***		***0.14***

1. Construction would take approximately 1.1 years to complete and begin in 2014. Offroad emission factors for year 2014 were used for a conservative analysis since older construction equipment would generate more emissions.

EMFAC 2011 Onroad Emission Factors for Construction Year 2014[1]

Vehicle Type	ROG (grm/mile)	CO (grm/mile)	NOx (grm/mile)	SOx (grm/mile)	PM_{10} (grm/mile)	$PM_{2.5}$ (grm/mile)	CO_2 (grm/mile)
Haul Truck @ 30 MPH	0.37	1.56	8.68	0.00	0.13	0.12	1,892.31
Water Truck @ 30 MPH	0.37	1.56	8.68	0.00	0.13	0.12	1,892.31
Worker Vehicle[2] @30 MPH	0.07	0.33	0.55	0.00	0.06	0.05	312.16
Vendor Vehicle[3] @30 MPH	0.30	1.22	7.08	0.00	0.13	0.12	1,555.30

1. Construction would take approximately 1.1 years to complete and begin in 2014. Onroad emission factors for year 2014 were used for a conservative analysis since older construction equipment would generate more emissions.

2. As is estimated in CalEEMod, worker vehicle emission factors are 50/25/25 percent mix of light duty autos, light duty truck class 1 and light duty trucks.

3. As is estimated in CalEEMod, vendor vehicle emission factors are 50/50 percent mix of heavy-heavy duty trucks and medium-heavy duty trucks.

Estimated Onroad Emissions During Construction

Construction Phase	Construction Equipment Type	Round Trip/day	Trip Length/vehicle (miles)	ROG (lb/day)	CO (lb/day)	NOx (lb/day)	SOx (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)	CO_2 (lb/day)
Trenching	Workers Commute	12	12.7	0.05	0.22	0.37	0.00	0.04	0.04	209.76
	Delivery Trucks	4	7.4	0.05	0.20	1.13	0.00	0.02	0.02	246.97
	Haul Trucks	2	22.3	0.07	0.31	1.71	0.00	0.03	0.02	372.13
Maximum Daily Construction Onroad Emissions				***0.17***	***0.73***	***3.21***	***0.00***	***0.08***	***0.07***	***828.87***

Fugitive Dust Emissions from Excavation Year 2014

Excavation Schedule	**1 days[a]**

Fugitive Dust Stockpiling Parameters

Silt Content[c]	Precipitation Days[d]	Mean Wind Speed Percent[e]	TSP Fraction	Area[f] (acres)
6.9	10	5	0.5	0.02

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[g]	Mean Wind Speed (mph)[h]	Moisture Content[i]	Dirt Handled (cy/day)[a]	Dirt Handled (lbs./day)[j]
0.35	4.9	7.9	13.9	34,750

Dragline Parameters

Drop Height (feet)	Moisture Content[i]	PM_{10} Scaling Factor	$PM_{2.5}$ Scaling Factor
3	7.9%	0.75	0.017

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Grading[k]: PM10 Emissions (lb/day) = 0.60 x 0.051 x mean vehicle speed$^{2.0}$ x VMT x (1 - control efficiency)

Storage Piles[l]: PM10 Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x TSP fraction x Area) x (1 - control efficiency)

Material Handling[m]: PM10 Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton)x (1 - control efficiency)

Dragline Equation for PM_{10} Emissions[o] (lbs/day) = [((0.0021) x (drop height)$^{0.7}$) / (moisture content)$^{0.3}$] x 0.75 x Dirt Handled x Control Efficiency

Dragline Equation for $PM_{2.5}$ Emissions[o] (lbs/day) = [((0.0021) x (drop height)$^{1.1}$) / (moisture content)$^{0.3}$] x 0.017 x Dirt Handled x Control Efficiency

Description	Control Efficiency %	Unmitigated PM10[n] lb/day	Unmitigated PM2.5 lb/day
Storage Piles	61	0.0200	0.0042
Material Handling	61	0.0011	0.0002
Dragline	61	0.0010	0.0001
Total		**0.022**	**0.004**

Notes:

a) Obtained from client.
b) Caterpillar Performance Handbook, Edition 33, October 2003 Operating Speeds, p 2-3.
c) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Corection Factors Applicable to the Predictive Emission Factor Equations
d) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
e) Mean wind speed percent - percent of time mean wind speed exceeds 12 mph.
f) Assumed storage piles are 0.02 acres in size
g) USEPA, AP-42, Jan 1995, Section 13.2.4 Aggretate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
h) Mean wind speed at the LAX Wind Monitoring Station.
i) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28.
j) Assuming 014 cubic yards of dirt handled [(014 cyd x 2,500 lb/cyd)/1 days = 34,750 lb/day]
k) USEPA, AP-42, July 1998, Table 11.9-1, Equation for Site Grading ≤ 10 µm
l) USEPA, AP-42, Jan 1995, Section 13.2.4 Aggretate Handling and Storage Piles, Equation 1
m) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12.
n) Includes watering at least three times a day per Rule 403 (61% control efficiency).
o) Source: USEPA, AP-42, Emission Factor Equations for Uncontrolled Dust Sources at Western Surface Coal Mines, Table 11.9-1, Dragline calculations for PM_{10} and $PM_{2.5}$.

Estimated Daily Emissions During Construction

Construction Phase	Emission Source	ROG (lb/day)	CO (lb/day)	NOx (lb/day)	SOx (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Trenching	On-site Equipment	1.58	3.00	3.98	0.01	0.27	0.25
	On-road Commute						
	Worker Commute	0.05	0.22	0.37	0.00	0.04	0.04
	Delivery Trucks	0.05	0.20	1.13	0.00	0.02	0.02
	Haul Trucks	0.07	0.31	1.71	0.00	0.03	0.02
	Subtotal Emission	0.17	0.73	3.21	0.00	0.08	0.07
Regional Daily Maximum		1.74	3.73	7.19	0.01	0.35	0.32
	THRESHOLD	75	550	100	150	150	55
	IMPACT?	NO	NO	NO	NO	NO	NO

Estimated Total GHG Emissions During Construction[1]

Construction Phase	Emission Source	CO_2 (MT)	CH_4 (MT)	CO_{2e} (MT)
Phase 1: Site Preparation	Offsite-Equipment	222	0.018	222
	On-road Commute			
	Workers Commute	27	0.00	27
	Delivery Trucks	31	0.00	31
	Haul Trucks	47	0.00	47
	Subtotal Emission	105	0.00	105
Total GHG During Construction		**327**	**0.02**	**328**
Amortized GHG				**11**

1. Construction GHG emissions are amortized over 30 years based on the Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group # 13, August 26, 2009, SCAQMD.

Construction Schedule

5	day/wk
4	wk/month
56	week
2204	lb/MT

Appendix C
Cultural Resources Assessment

DRAFT
RESEDA BOULEVARD PIPELINE PROJECT
PHASE I ARCHAEOLOGICAL ASSESSMENT
LOS ANGELES COUNTY, CALIFORNIA

Prepared for:
Charles Holloway
Supervisor of Environmental Assessment
Los Angeles Department of Water and Power
P.O. Box 51111, Room 1044
Los Angeles, California 90051-0100

Prepared by:
AECOM
515 South Flower Street, 8th Floor
Los Angeles, California 90071

Authors:
Linda Kry, B.A.
Marc A. Beherec, Ph.D., RPA

October 2013

Acres: approximately 0.38 U.S.G.S. 7.5' Quadrangle: Canoga Park

Keywords: San Fernando Valley, Northridge, Zelzah, Reseda Boulevard, Cantara Street, Etiwanda Avenue, Strathern Street, Roscoe Boulevard

TABLE OF CONTENTS

APPENDICES

LIST OF FIGURES

Figure **Page**

LIST OF PLATES

Plate **Page**

LIST OF TABLES

Table **Page**

EXECUTIVE SUMMARY

AECOM was retained by the Los Angeles Department of Water and Power (LADWP) to conduct a Phase I cultural resources assessment for the Reseda Boulevard Pipeline Project, to identify potential impacts to cultural resources in compliance with provisions of the California Environmental Quality Act (CEQA). The project proposes to replace approximately 6,600 linear feet of existing 8-inch-diameter and 12-inch-diameter potable water main distribution pipeline with earthquake-resistant ductile iron pipe as part of LADWP's seismic safety program. Portions of Reseda Boulevard, Roscoe Boulevard, Etiwanda Avenue, Cantara Street, and Strathern Street in the San Fernando Valley are currently slated for pipeline replacement as part of this project. LADWP is the lead agency.

A records search in connection with this project was conducted at the South Central Coastal Information Center housed at California State University, Fullerton. The records search revealed that the entirety of the proposed project area has not been subject to previous cultural resources study and no cultural resources have been identified within the proposed project area.

A Native American contact program was implemented consisting of an information letter, response form, and map that were sent to local Native American representatives as designated by the Native American Heritage Commission (NAHC). Additionally, a Sacred Lands File search conducted by the NAHC did not result in the identification of documented sacred lands within, or in the vicinity of, the proposed project area.

In addition, a field survey was conducted as part of this assessment to identify the presence of any cultural resources in the proposed project area. The field survey did not result in the identification of any cultural resources.

The lack of surface evidence of archaeological materials does not preclude the possibility that subsurface archaeological materials may exist. Paleontological findings are pending receipt of letter from Vertebrate Paleontology Division of the Natural History Museum of Los Angeles County. Based on the results of this cultural resources assessment, archaeological resources may be encountered during ground-disturbing activities for the proposed project. If archaeological resources are encountered during ground-disturbing activities, LADWP will contact a qualified archaeologist to evaluate and determine appropriate treatment for the resource in accordance with California Public Resources Code (PRC) Section 21083.2(i). If any Native American cultural material is encountered within the project site, consultation with interested Native American parties will be conducted to apprise them of any such findings and solicit any comments they may have regarding appropriate treatment and disposition of the resources. If human remains are discovered, work in the immediate vicinity of the discovery will be suspended and the Los Angeles County Coroner contacted. If the remains are deemed Native American in origin, the Coroner will contact the NAHC and identify a Most Likely Descendant pursuant to PRC Section 5097.98 and California Code of Regulations Section 15064.5.

INTRODUCTION

This document reports a Phase I archaeological assessment conducted in connection with the Reseda Boulevard Pipeline Project (project). This report was prepared by AECOM to assist the Los Angeles Department of Water and Power (LADWP) in implementing their long-term seismic improvement program for the water system. The objective of the proposed project is to maintain system reliability and service to the project area by replacing an aging water distribution pipeline with earthquake resistant piping.

The project proposes to replace approximately 6,600 linear feet of existing 8-inch-diameter and 12-inch-diameter potable water main distribution pipeline with earthquake-resistant ductile iron pipe (ERDIP) as part of LADWP's seismic safety program. The proposed replacement of water distribution main would be located in consecutive segments entirely within the public street rights-of-way in urbanized and fully developed areas in the Northridge community of the City of Los Angeles within the San Fernando Valley and include portions of Reseda Boulevard, Roscoe Boulevard, Etiwanda Avenue, Cantara Street, and Strathern Street.

This document is prepared in support of a Draft Initial Study/Mitigated Negative Declaration prepared in accordance with California Environmental Quality Act (CEQA), Public Resources Code (PRC) Section 21000 et seq. and the State CEQA Guidelines, California Code of Regulations (CCR) Section 15000 et seq.

REPORT ORGANIZATION

This report is organized following *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format*, Department of Parks and Recreation, Office of Historic Preservation, State of California, 1990. These guidelines provide a standardized format and suggested report content, scaled to the size of the project. This report first provides a project description including project location and setting, and proposed project work. Next, the environmental and cultural settings of the proposed project area are presented. This is followed by the archival research methods and results, which also include a description of the Sacred Lands File search and discussion of the results, including the Native American Contact Program. In addition, a paleontological records search and the results are provided. Survey methodology and results are then described. The final section summarizes the results of the cultural resources investigation and provides recommendations and conclusions for project mitigation.

PROJECT PERSONNEL

AECOM personnel involved in the cultural resources assessment are as follows: Linda Kry, B.A., served as report author, conducted archival research and performed the archaeological survey; Marc Beherec, Ph.D., RPA, coauthored the report; Christy Dolan, M.A., RPA, performed senior review; Frank Humphries, B.A., assisted with the archaeological survey; and Tim Harris, B.A., provided

graphics and geographic information system support. Resumes of key personnel are included in Appendix A.

PROJECT DESCRIPTION

PROJECT LOCATION AND SETTING

The project area is situated in developed areas within the San Fernando Valley area of the City of Los Angeles. It is bordered by the San Gabriel Mountains to the northeast, Santa Susanna Mountains to the northwest, and Santa Monica Mountains to the south (Figure 1). The project area is located on the Canoga Park United States Geological Survey (USGS) 7.5-minute topographic quadrangle in sectioned portions of Township 2 North, Range 16 West (Figure 2).

The proposed replacement of water distribution mains would be located in consecutive segments entirely within the public street rights-of-way in urbanized and fully developed areas in the Northridge community of the City of Los Angeles within the San Fernando Valley. More specifically, the proposed project would replace public water distribution mains in the following locations (Figure 3):

- Roscoe Boulevard from Reseda Boulevard to east of Reseda Boulevard;
- Reseda Boulevard from Roscoe Boulevard to Strathern Street;
- Cantara Street from Reseda Boulevard to Etiwanda Avenue;
- Etiwanda Avenue from Roscoe Boulevard to Strathern Street; and
- Strathern Street from Reseda Boulevard to Etiwanda Avenue.

PROPOSED UNDERTAKING

The proposed project is part of LADWP's long-term seismic improvement program for the water system. This is a demonstration project and would be the second application of ERDIP in the City of Los Angeles. The project proposes to replace an existing public water distribution main in portions of Roscoe Boulevard, Reseda Boulevard, Etiwanda Avenue, Cantara Street, and Strathern Street with ERDIP near the Northridge Hospital Medical Center. The existing water distribution main is in need of replacement due to the age of the pipe. ERDIP is proposed to be used because the area experienced substantial ground failures during the 1994 Northridge Earthquake, and to maintain system reliability and continued service to the Northridge Hospital Medical Center.

PROJECT DESCRIPTION

The project proposes to replace an aging water distribution pipeline with earthquake-resistant piping to maintain system reliability and service to the project area within the San Fernando Valley. This project is proposed as part of LADWP's long-term seismic improvement program for the water system.

Source: ESRI 2013

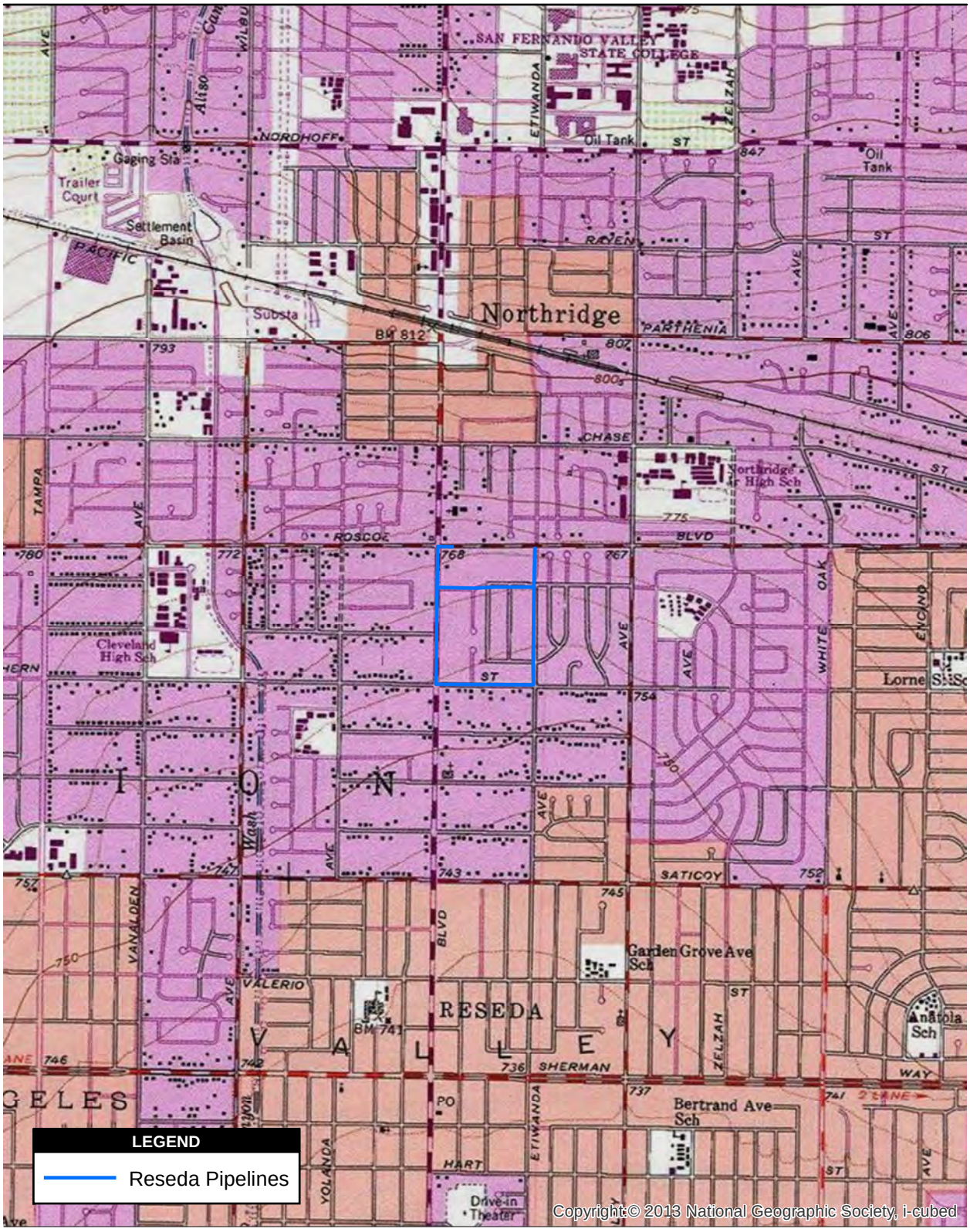
6 3 0 6 Miles

Scale: 1 = 380,000; 1 inch = 6 miles

Figure 1
Regional Location Map

LADWP Reseda Boulevard Pipeline Project

Path: \\USLA1FS002\pdd_prod\Projfile\2013\60305674_LADWP_Reseda\900-CAD-GIS\920 GIS-Graphics\922_Maps\Figure1_Regional_Loc.mxd, 10/4/2013, wilsons5



Source: Canoga Park USGS 7.5" Quadrangle

2,000 1,000 0 2,000 Feet

Scale: 1:24,000; 1 inch = 2,000 feet

Figure 2
Project Location Map

LADWP Reseda Boulevard Pipeline Project

Path: \\USLA1FS002\pdd_prod\Projfile\2013\60305674_LADWP_Reseda\900-CAD-GIS\920 GIS-Graphics\922_Maps\Figure2_Project_Loc.mxd, 10/4/2013, wilsons5

Source: SANGIS 2010; ESRI 2011; AerialExpress 2009

400 200 0 400 Feet

Scale: 1 = 4,800; 1 inch = 400 feet

Figure 3
Project Area Map

Path: \\USLA1FS002\pdd_prod\Projfile\2013\60305674_LADWP_Reseda\900-CAD-GIS\920 GIS-Graphics\922_Maps\Figure3_Project_Area.mxd, 10/4/2013, wilsons5

The proposed replacement of water distribution main would be located entirely within the public street rights-of-way in urbanized and fully developed areas in the Northridge community of the City of Los Angeles within the San Fernando Valley. The proposed project includes the following public water distribution main replacements:

- 166 feet of 12-inch pipe on the south side of Roscoe Boulevard from Reseda Boulevard to east of Reseda Boulevard;
- 1,822 feet of 12-inch pipe on the east side of Reseda Boulevard from Roscoe Boulevard to Strathern Street;
- 1,335 feet of 8-inch pipe on the south side of Cantara Street from Reseda Boulevard to Etiwanda Avenue;
- 1,872 feet of 8-inch pipe on the east side of Etiwanda Avenue from Roscoe Boulevard to Cantara Street and on the west side of Etiwanda Avenue from Cantara Street to Strathern Street; and
- 1,278 feet of 8-inch pipe on the south side of Strathern Street from Reseda Boulevard to Etiwanda Avenue.

In total, approximately 6,473 linear feet of new ERDIP would be installed with implementation of the proposed project.

Installation of the ERDIP would occur within public roads and using a cut-and-cover trenching technique. An approximately 2.5-foot-wide by 5-foot-deep trench in proximity to the existing water distribution mains would be excavated within the roadway that could be covered with metal plates during periods of the day when construction is not ongoing. Once the pipeline has been installed within a segment, the trench would be backfilled with imported slurry and returned to its original condition. Pipeline installation would necessitate restrictions of on-street parking and closure of up to two lanes of the roadway depending on the location of construction. In general, approximately 25 linear feet of pipeline would be installed per day.

Construction staging would occur at the LADWP yard near Devonshire Street and Balboa Boulevard.

Once in service, the old water distribution mains would be abandoned in place. No permanent above-ground structures would be constructed, and there would be no operational component beyond existing maintenance activities.

CONSTRUCTION SCHEDULE

Construction of the proposed project is anticipated to begin in summer 2014 and take approximately one year to complete, concluding in mid-2015.

SETTING

ENVIRONMENTAL SETTING

The project is located within the San Fernando Valley of the Los Angeles Basin. The Central Transverse Ranges Province forms an east-west-trending northern backdrop, while the northwest-oriented Peninsular Ranges Province bounds to the south. The Los Angeles Reservoir is nestled at the foot of San Fernando Pass, which straddles the San Gabriel Mountains to the northeast and Santa Susana Mountains to the north. The generally Mediterranean climate is characterized as mild, with warm, nearly rainless summers and mild winters with only occasional storms.

The San Fernando Valley is located within a valley floor with elevations ranging from 500 feet above sea level in the southeast to 1,000 feet above sea level in the west. Natural vegetation communities located within the vicinity of the project consist mostly of willow woodland, mulefat scrub, and coastal sage scrub. Also present are areas of disturbed and nonnative vegetation including park, ruderal, and pond that can be characterized as primarily park/ruderal habitat. Landscaping consists of ornamental tree plantings and maintained grass lawns, as well as areas composed of ornamental trees with an understory of ruderal species. Ruderal grassland occurs in disturbed areas where vegetation consists mainly of early successional native herbaceous plants. Black mustard and wild radish (*Ralphanus sativus*) are common in this habitat as are several nonnative grasses, including ripgut brome (*Bromus diandrus*) and foxtail chess (*Bromus rubens*). Fauna historically found in the area include black-tailed jackrabbit (*Lepus californicus*), coyote (*Canis latrans*), and numerous rodents such as Botta's pocket gopher (*Thomomys bottae*), and pocket mice (*Perognathus* spp.). Red-tailed hawks (*Buteo jamaicensis*) were commonly found, as were western scrub jays (*Alphelocoma californica*), mourning doves (*Zenaida macroura*), and California quail (*Callipepla californica*).

CULTURAL SETTING

As a framework for discussing the types of cultural resources that might be encountered in the vicinity of the proposed project, the following section summarizes our current understanding of major prehistoric and historic developments in and around Los Angeles and the San Fernando Valley. This is followed by a more focused discussion of the history of the project area itself.

Prehistoric Overview

While people are known to have inhabited southern California beginning at least 13,000 years Before Present (B.P.) (Arnold et al. 2004), the first evidence of human occupation in the Los Angeles area dates to at least 9000 years B.P. and is associated with a period known as the Millingstone Cultural Horizon (Wallace 1955; Warren 1968). Millingstone populations established permanent settlements that were located primarily on the coast and in the vicinity of estuaries, lagoons, lakes, streams, and marshes where a variety of resources, including seeds, fish, shellfish, small mammals, and birds, were exploited. Early Millingstone occupations are typically identified

by the presence of handstones (manos) and millingstones (metates), while those Millingstone occupations dating later than 5000 B.P. contain a mortar and pestle complex as well, signifying the exploitation of acorns in the region.

Although many aspects of Millingstone culture persisted, by 3500 B.P., a number of socioeconomic changes occurred (Erlandson 1994; Wallace 1955; Warren 1968). These changes are associated with the period known as the Intermediate Horizon (Wallace 1955). Increasing population size necessitated the intensification of existing terrestrial and marine resources (Erlandson 1994). This was accomplished in part through use of new technological innovations such as the circular shell fishhook on the coast, and in inland areas, use of the mortar and pestle to process an important new vegetal food staple, acorns. Use of the dart and atlatal resulted in a more diverse hunting capability. Evidence for shifts in settlement patterns has been noted as well at a variety of locations at this time and is seen by many researchers as reflecting increasingly territorial and sedentary populations. The Intermediate Horizon marks a period in which specialization in labor emerged, trading networks became an increasingly important means by which both utilitarian and nonutilitarian materials were acquired, and travel routes were extended.

The Late Prehistoric period, spanning from approximately 1500 years B.P. to the Spanish mission era, is the period associated with the florescence of contemporary Native American groups. The northern San Fernando Valley was the northernmost extent of the territory occupied by people whom the Spanish referred to as the *Fernadeño*, whose name was derived from nearby Mission San Fernando. The *Fernadeño* spoke one of four regional Uto-Aztecan dialects of Gabrielino, a Cupan language in the Takic family, and were culturally identical to the Gabrielino. The Tataviam and Chumash, of the Hokan Chumashan language family, lived to the north and west of this territory, respectively, and it is likely that the territorial boundaries between these linguistically distinct groups fluctuated in prehistoric times (Bean and Smith 1978; Shipley 1978).

Occupying the southern Channel Islands and adjacent mainland areas of Los Angeles and Orange counties, the Gabrielino are reported to have been second only to their Chumash neighbors in terms of population size, regional influence, and degree of sedentism (Bean and Smith 1978). The Gabrielino are estimated to have numbered around 5,000 in the pre-contact period (Kroeber 1925). Maps produced by early explorers indicate the existence of at least 40 Gabrielino villages, but as many as 100 may have existed prior to contact with Europeans (Bean and Smith 1978; McCawley 1996; Reid 1939[1852]).

Prehistoric subsistence consisted of hunting, fishing, and gathering. Small terrestrial game was hunted with deadfalls, rabbit drives, and by burning undergrowth, while larger game such as deer were hunted using bows and arrows. Fish were taken by hook and line, nets, traps, spears, and poison (Bean and Smith 1978; Reid 1939[1852]). The primary plant resources were the acorn, gathered in the fall and processed with mortars and pestles, and various seeds that were harvested in late spring and summer and ground with manos and metates. The seeds included chia and other sages, various grasses, and islay or holly leafed-cherry (Reid 1939[1852]).

Historic Overview

Spanish explorers made brief visits to Gabrielino territory in both 1542 and 1602, and on both occasions the two groups exchanged trade items (McCawley 1996). Sustained contact with Europeans did not commence until the onset of the Spanish Period, which began in 1769 when Gaspar de Portola and a small Spanish contingent began their exploratory journey along the California coast from San Diego to Monterey. Mission *San Fernadiño Rey de España*, the seventeenth of the 21 Franciscan missions in Alta California, was founded on September 8, 1797, and completed less than a year later. Its location, approximately 5 miles northeast of the project footprint, was chosen as a stopping point between Mission San Gabriel and Mission San Buenaventura, and prospered by selling cattle hides and tallow and various fruit crops to the nearby Pueblo of Los Angeles (Wright 1992). Agriculture was made possible in the relatively dry area through the construction of a stone masonry dam in 1808, bringing water from the mountains to mission vineyards by way of a 1.3-mile-long aqueduct, completed in 1811.

Gabrielino villages are reported by early explorers to have been most abundant along the dominant rivers of the Los Angeles Basin, including the Los Angeles, San Gabriel, and Santa Ana Rivers. Ten important villages were located within the San Fernando Valley, and the most populous of these was *Pasheeknga*, located near where the Mission was established. Other northern San Fernando Valley communities included *Tohuunga* and *Muuhonga*. *Tohuunga* was likely located near the mouth of Little Tujunga Canyon, while, according to Gabrielino informant Jose Zalvidea, *Muuhonga* was located "about two and a half miles from San Fernando, farther up the canyon from San Fernando" (McCawley 1996:40).

By the early 1800s, the majority of the surviving Gabrielino population had entered the mission system. Mission life offered the Indians security in a time when their traditional trade and political alliances were failing and epidemics and subsistence instabilities were increasing (Jackson 1999). This lifestyle change also brought with it significant negative consequences for Gabrielino health and cultural integrity.

Alta California became a state, with its capital at Monterey, when Mexico won its independence from Spain in 1821. The authority of the California missions gradually declined, culminating with their secularization in 1834. Although the Mexican government directed that each mission's lands, livestock, and equipment be divided among its converts, the majority of these holdings quickly fell into non-Indigenous hands. Mission buildings were abandoned and quickly fell into decay. If mission life was difficult for Native Americans, secularization was typically worse. After two generations of dependence on the missions, Native Americans were suddenly disenfranchised. After secularization, "nearly all of the Gabrielinos went north while those of San Diego, San Luis, and San Juan overran this county, filling the Angeles and surrounding ranchos with more servants than were required" (Reid 1977 [1851]:104). Upon his 1852 visit to Los Angeles, John Russel Barlett wrote,

> I saw more Indians about this place than in any part of California I had yet visited. They were chiefly mission Indians, i.e., those who had been connected with the missions and had derived their support from them until the suppression of those establishments. They are a miserable, squalid-looking set, squatting or lying about

> the corners of the streets with no occupation. They have no means of obtaining a living, as their lands are taken from them, and the missions for which they labored and which provided after a sort for many thousands of them, are abolished (as cited in Sugranes 1909:77).

The first party of U.S. immigrants arrived in Los Angeles in 1841, although surreptitious commerce had previously been conducted between Mexican California and residents of the United States and its territories. Included in this first wave of immigrants were William Workman and John Rowland, who soon became influential landowners. As the possibility of a takeover of California by the United States loomed large, the Mexican government increased the number of land grants in an effort to keep the land in the hands of upper-class *Californios* like the Domínguez, Lugo, and Sepúlveda families (Wilkman and Wilkman 2006:14–17). Governor Pío Pico and his predecessors made more than 600 rancho grants between 1833 and 1846, putting most of the state's lands into private ownership for the first time (Gumprecht 1999). Alta California Governor Pio Pico sold the San Fernando Valley to Eulogio de Celis for $14,000 around this time. Having been established as a pueblo, property within Los Angeles could not be dispersed by the governor, and this task instead fell under the city council's jurisdiction (Robinson 1979).

The United States took control of California after the Mexican–American War of 1846, and seized Monterey, San Francisco, San Diego, and Los Angeles (then the state capital) with little resistance. Local unrest soon bubbled to the surface, and Los Angeles slipped from U.S. control in 1847. Hostilities officially ended with the signing of the Treaty of Guadalupe Hidalgo in 1848, in which the United States agreed to pay Mexico $15 million for the conquered territory, which included California, Nevada, and Utah, and parts of Colorado, Arizona, New Mexico, and Wyoming. The conquered territory represented nearly half of Mexico's pre-1846 holdings. California joined the United States in 1850 as the 31st state (Wilkman and Wilkman 2006:15).

The discovery of gold in northern California led to an enormous influx of American citizens in the 1850s and 1860s, and these settlers rapidly displaced the old rancho families. In 1873, the U.S. government confirmed legal title to old Rancho ex-Mission San Fernando at 116,858.43 acres, the largest private land parcel in California. The Southern Pacific Railroad extended its line from San Francisco to Los Angeles in 1876, passing through the San Fernando Valley thanks to a new tunnel through Newhall Pass. Newcomers continued to pour into Los Angeles and the population nearly doubled between 1870 and 1880. The completion of the second transcontinental line, the Santa Fe, took place in 1886 causing a fare war that drove fares to an unprecedented low. More settlers continued to head west and the demand for real estate skyrocketed. The city's population rose from 11,000 in 1880 to 50,000 by 1890 (Meyer 1981:45).

At the dawn of the 20th century, the pace of development within the Los Angeles Basin was stifled due to a limited water supply. Under the direction of city engineer William Mulholland, the Los Angeles Bureau of Water Works and Supply constructed the 238-mile-long Los Angeles Aqueduct. This five-year project, completed in 1913, employed the labor of over 5000 men and brought millions of gallons of water into the San Fernando (now Van Norman) Reservoir. During the first three decades of the 20th century, more than two million people moved to Los Angeles County, transforming it from a largely agricultural region into a major metropolitan area (Gumprecht 1999).

The beginning of the 20th century saw the florescence of a uniquely suburban metropolis, where a vast network of residential communities overshadowed city centers, where the single-family home was valued over the high-rise, and where private space took precedence over public space (Hawthorne 2006). This landscape demanded an innovative transportation solution, and Los Angeles embraced automobiles and freeways like no other city had. The first homemade car puttered down city streets in 1897. Seven years later, the first grand theft auto was reported by Los Angeles Police (Wilkman and Wilkman 2006:50). Inexpensive automobiles gained popularity in the 1920s, soon creating tremendous congestion in the centers of cities and necessitating alternate transportation routes. The Arroyo Seco Parkway, connecting Los Angeles to Pasadena, was among the earliest "express auto highways" in the United States, opening in December 1940 (Balzar 2006). Dozens of freeways were constructed in the post-World War II years, radically altering the character of Los Angeles by simultaneously dividing local neighborhoods and connecting outlying communities.

During the first three decades of the 20th century, more than two million people moved to Los Angeles County, transforming it from a largely agricultural region into a major metropolitan area. By 1945, Los Angeles had undertaken 95 annexations, expanding from a 28-square-mile agrarian pueblo into a densely populated city covering more than 450 square miles (Robinson 1979:245).

History of the Project Area

San Fernando Valley

Mission *San Fernando Rey de España* was founded by Fermín Francisco de Lasuén, Junipero Serra's successor, in 1797. The mission was established midway between the San Gabriel and San Buenaventura missions. The placement of Mission San Fernando, and missions in Alta California in general, was far from incidental since Franciscans carefully selected spaces with ample room for agriculture, access to water, and nearby sizeable Native American populations (Gentilcore 1961), which were needed in order to erect the mission and then to maintain an eventual mission system.

Under the direction of Father Francisco Dumetz and Father Juan Cortés, Native Americans built an adobe church, a storeroom, a weaving room, and a granary within one year of the mission's founding. Larger churches to accommodate the increasing numbers of Native Americans were built in 1800 and 1806 (MacMillan 1996). Construction efforts were not simply large scale, but also scaled down in the quotidian production activities at Mission San Fernando. Native Americans produced shoes and saddles from the extensive mission cattle. Rawhides were also used in the architectural construction of the mission as they were used to hold boards together. Native Americans also produced cloth, brick, tile, soap, olive oil, and wine. The Mission also had a blacksmith shop where Natives fashioned iron tools and plows (MacMillan 1996). The new work schedules at Mission San Fernando undoubtedly contrasted to how time was perceived and made use of by the Gabrielinos and Chumash before Spanish contact. MacMillan (1996) notes that many Native Americans at Mission San Fernando rebelled by refusing to work or by working slow. It was also common for Native Americans to flee from the missions.

Native Americans at Mission San Fernando also produced art. The fathers at Mission San Fernando selected certain Native individuals to paint murals and decorate doorways and windows with designs

(Phillips 1976). The paintings have been dated to 1806–07 and have been attributed to Juan Antonio. According to Mission San Fernando records, a Juan Antonio was baptized at the mission in 1798. Phillips (1976) deduced that Juan Antonio was unlikely a child when he was baptized in 1798 since it was improbable that mission officials would delegate such an artistic endeavor to a child. Juan Antonio must have entered the mission system at a later age and therefore with memories, understandings, and practices of a pre-contact Native American ways of life (Phillips 1976).

The San Fernando Valley mission life, in particular, was not immediately affected in 1822 when New Spain gained its independence from Spain. In 1822, there were 1,001 indigenous individuals living within the mission. Native Americans continued agricultural work and cultivated wheat, barley, corn, beans, and peas. They also tended to their fruit trees, cattle, horses, and sheep, and vineyards (Robinson 1942). In 1834, though, the *desecularization mission* of post-Independent Mexico reached the San Fernando Mission (Robinson 1942). Secularization brought about a progressive deterioration at Mission San Fernando. Annual losses in farming were recorded and the indigenous population also increasingly drifted away from the mission center (Robinson 1942, 1963). With the decline of mission life, the physical mission itself, the symbol of centrality, also dissolved. Indians disbanded and mission celebrations broke down.

The new republic was characterized by chaotic rule. This characterization did not circumvent Alta California and added to the post-Mexican independence social cataclysm. In California, the disorder was witnessed in the dozen governors that ruled in the 26 years following independence and in the several uprisings that took place. Two of these rebellions took place near the Cahuenga Pass (Link 1991). In 1831, Jose Carillo and Abel Stearns battled the governor, Manuel Victoria, near the pass. Soon after the skirmish, Victoria resigned. In 1845, then Governor Manuel Micheltorena was met by a band of 284 rebels led by Juan Bautista Alvarado and Jose Castro. Peace was negotiated and, again, a governor resigned from office. Micheltorena was followed by Pio Pico, the last governor under Mexican rule (Link 1991).

Amid the rebellions, gold was discovered in 1842, north of the ex-Mission San Fernando in Placerita Canyon. The discovery of gold prompted the migration of many prospectors who worked the canyon for several years and yielded $6,000 to $8,000 each year (Robinson 1942).

The Mexican-American war was yet another circumstance that added to the San Fernando Valley's early 19th -century turmoil. In 1846, the Mexican government authorized Pio Pico to take any steps necessary to protect Alta California from American invasion. Consequently, Pico sold the greater part of what was referred to as "*Rancho Ex-Mision de San Fernando*" in 1846 for $14,000. More than 116,000 acres were sold to a native of Spain, Eulogio de Celis. With the exception of Rancho Encino, Rancho El Escorpion, and a few hundred acres around the mission, de Celis nearly purchased the entire valley. This sale effectively marked the valley's transition to private ownership. In addition to payment, de Celis agreed to tend to the aging Native Americans on his newly acquired land and their respective agricultural autonomy.

The Mexican-American war terminated in Alta California with the Treaty of Cahuenga. The agreement was signed in the San Fernando Valley on January 13, 1847. Andres Pico and John C. Fremont, along with five men from each side, signed the treaty.

In 1852, de Celis filed a claim with the Board of Land Commission, a board specifically created by Congress to investigate Spanish and Mexican land titles in their newly acquired territories. The divergent Mexican and American legal as well as social practices often clashed in these investigations. These proceedings were also stagnant processes. For example, although de Celis' proprietary rights were validated by the Board after his appeal (Link 1991), it was not until 1873 that the United States District Court upheld the Board's findings (Robinson 1942).

De Celis, though, returned to Spain in 1853. His lessee (and later part owner), Andres Pico, remained at Rancho Ex-Mission of San Fernando and occupied the former mission buildings (Plate 1). In 1862, Andres Pico transferred his interests in the San Fernando Rancho to his brother, Pio. On July 2, 1869, Pio Pico once again sold the land. This time, however, the sale excluded certain areas such as 1,000 acres near the mission. Pico in turn used the money to build a hotel in Los Angeles, which stands today, the Pico House. The sale was made to the San Fernando Farm Homestead Association, which was headed by Isaac Lankershim and I.N. Van Nuys. The Association fought the heirs of Eulogio de Celis in court and in 1871, the District Court granted the Association full title to the southern portion of the valley. Under the administration of Lankershim and Van Nuys, the southern portion of the valley focused on wheat farming.

Plate 1. Refurbished Living Room in Andres Pico House (San Fernando Valley Historical Society).

The northern portion of the valley was bought by George K. Porter and Charles Maclay from Eulogio de Celis' son in 1874. Also in 1874, Maclay registered the City of San Fernando with the County Recorder in Los Angeles. He presented a map depicting streets, blocks, and several thousand 25-foot lots. The Southern Pacific Railroad extended from Los Angeles to the new city and essentially helped colonize it. The Southern Pacific offered passengers from Los Angeles to San Fernando half-rate if they traveled with the intention to purchase lands (Keffer 1934; Robinson 1942). The novelty of a new city created a tourist attraction. Having a leisurely lunch at the old mission (Robinson 1942) likely aided in constructing a tourist attraction as feelings of charm, fantasy, and exoticism were created by the aged mission (Plate 2). Affective qualities were also likely drawn from the new city's comparison to the clamor of Los Angeles. San Fernando, its mission and its quiet and calm, represented a time and space gone by. San Fernando was thus packaged and consumed at $10 to $25 for each town lot or $5 to $40 an acre for farming lands (Robinson 1942).

Plate 2. "San Fernando Mission around 1900" (Oviatt Digital Collection).

However, the San Fernando Valley was not simply a romanticized, remote oasis. In addition to having Los Angeles readily accessible in 1874 through the Southern Pacific Railroad line, in just two short years the San Fernando Valley was connected to San Francisco. With Chinese men as the primary labor, the San Fernando Tunnel was completed in a near 16-month construction feat in 1876 (Robinson 1942, 1961).

In addition, the valley experienced a real estate boom from 1887–88 and its immense fertile lands lured residents and developers. The Lankershim Ranch Land and Water Company purchased the east

1,200 acres of the southern half of the Rancho Ex-Mission of San Fernando from the Los Angeles Farm and Milling Company (formerly known as the San Fernando Homestead Association mentioned above). These acres were subdivided by the company in 10- to 40-acre parcels that sold for $5 to $150 each. In the northern half of the valley, land was also purchased for subdivision, and once again the San Fernando Valley was packaged and sold on the real estate market as a fertile agriculture endeavor. This agronomic promise was also a reality, however. The wheat-producing business that was pioneered by Lankershim and Van Nuys in the early 1870s had become a production machine by the late 1800s. Flour milling was supplemented to wheat farming and, in 1888, the Los Angeles Farm and Milling Company produced and milled 510,000 bushels of wheat (Robinson 1961).

Another critical moment in the valley's history came in 1913 when the irrigation plan proposed by the Los Angeles mayor, Fred Eaton, and the Los Angeles water department engineer, William Mulholland, took its material form. The Los Angeles Aqueduct brought water from the Owens Valley in the High Sierra to Los Angeles. To take advantage of the water supply for the dry farming area, the various valley communities agreed to be annexed by Los Angeles at different times from 1915 to 1923 (Robinson 1963).

Zelzah

The story of the project area is one of ranching interrupted by the sudden early 20th-century growth of the San Fernando Valley. The project lay in the Ex-Mission de San Fernando land grant, approximately 5 miles southwest of the mission itself and approximately 2.5 miles northwest of Rancho El Escorpion. In 1887, Henry Hubbard and Bud Wright purchased the 1,100-acre segment that included the project area, an area known as Hawk Ranch, from Benjamin Porter, the brother of George Porter. Hubbard and Wright farmed the land until 1910, when they sold it to the Valley Farm Company for subdivision (*San Fernando Valley Magazine* 1975).

A small settlement, still mainly a farming community, grew on the ranch. The Hubbards and Wrights were early members of the San Fernando Methodist Church, and it is said, "It was a hot, dusty ride from the church in town to their quiet home, so Mrs. Wright, who was a diligent Bible student, renamed their ranch Zelzah Ranch from a Bible name meaning 'a place or rest'" (Hume 1931:4). Others claim she believed the name was "a Biblical name for oasis, or 'watering place in the desert'" (*San Fernando Valley Magazine* 1975:7). The Hebrew name Zelzah (צֶלְצַח) actually derives from shadow and seems to mean a shady place; it is mentioned only once in the Bible and is described as near the location of Rachel's Tomb (I Samuel 10:2; Strong 2007:1564). But the name is so unfamiliar to Western ears that later authors believed it must be of Native American derivation. Conflating the incorrect designation of the Hebrew name to mean oasis, with the assumption that the odd word must be Native American, some authorities have gone so far as to state, "The Shoshone word *zelzah* ('oasis' or 'spring') seems to have been used to describe the springs and vegetation marking the beginning of the Los Angeles River" (Hoover et al. 1990). Regardless of its origin, the community took the name of the Hubbard-Wright Ranch, Zelzah.

About 1906, the Southern Pacific Railroad moved its location to take advantage of the Chatsworth rock quarries, passing through the community in the process. Zelzah became the only Southern Pacific railroad stop in the valley. The railroad became the center of the community. The depot was

located southeast of the intersection of Reseda Boulevard and Parthenia Street, approximately 0.5 mile north of the project footprint (Plate 3). The depot was torn down in 1961, but the tracks remain active (*San Fernando Valley Magazine* 1975).

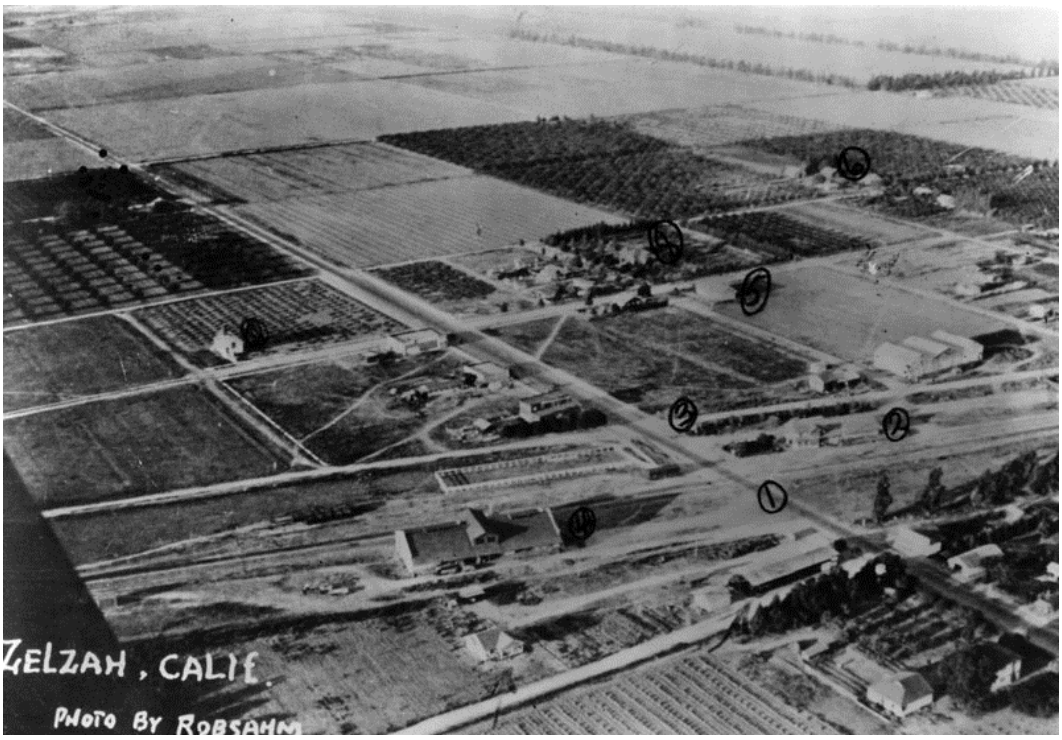


Plate 3. Aerial View of Zelzah, View Northeast. Reseda Boulevard Marked 1, Southern Pacific Depot Marked 2, Parthenia Street Marked 3 (LAPL 1918).

The community remained rural and semi-rural until World War II. Farming and ranching remained important to the local economy. The community thrived on its proximity to Hollywood and its Old West image. During this time, the region was particularly popular with members of the film industry, who maintained horse ranches in and around Zalzeh/Northridge. It regularly held rodeos and horse shows, calling itself the "Horse Capitol of California" (*San Fernando Valley Magazine* 1975). Moreover, the San Fernando Valley was the eggbasket of Los Angeles. The Runnymede Poultry Colony was established in nearby Reseda in July 1927 and grew to include 80 acres and $1 million worth of buildings to the south and east of the project area. In 1929, the colony was the largest poultry plant in the world, employing 60 people and producing 2,000,000 eggs per month (*Van Nuys News* 1929).

The community was annexed to Los Angeles in 1915. It changed its name twice, first to North Los Angeles in 1929 and then to Northridge Village or Northridge in 1938 (*San Fernando Valley Magazine* 1975).

Northridge came into its own as an urban extension of Los Angeles after World War II. After the war, the community underwent massive growth. The small farms and ranches were quickly carved up and built upon. The equestrian culture of the valley was maintained in nearby Pierce College but was squeezed out of Northridge itself. The project area was part of this development and experienced a rapid growth of houses and commercial buildings after the World War II. Of note, the Northridge Medical Center broke ground on its facility located on the corner of Reseda and Roscoe Boulevards in 1954, and opened its doors on September 18, 1955. Its 49 beds were already inadequate for the growing San Fernando Valley, and a second 50-bed wing was opened in 1958 (*HealthSpeak* 2006). The medical center remains one of the most important medical facilities in the valley.

ARCHIVAL RESEARCH

Archival research for this project was conducted in September 2013, at the South Central Coastal Information Center housed at California State University, Fullerton. The research focused on the identification of previously recorded cultural resources within the project area, as well as within a 0.5-mile radius of the project area (study area). The archival research included review of previously recorded archaeological site records and reports, historic site and property inventories, and historic maps including Sanborn Fire Insurance Maps. Inventories of the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the California State Historic Resources Inventory (HRI), California Historical Landmarks, and Points of Interest were also reviewed to identify cultural resources within both the project area and study area.

ARCHIVAL RESEARCH AND PREVIOUS STUDIES

Previous Cultural Resources Investigation Reports

The records search revealed that 10 cultural resource investigations were previously conducted within 0.5-mile of the project area (Table 1). These cultural resource investigations consist of three Phase I reports, one cultural assessment, one historic architectural assessment, one report on records search results, one study, one evaluation report, one monitoring report, and one report for a cell tower. The entirety of the project area has not been previously surveyed and/or investigated.

Table 1. Previous Surveys Conducted within 0.5 Mile of the Project Area

Author	Report (LA-)	Description	Date
Anonymous	2950	Consolidated Report: Cultural Resource Studies for the Proposed Pacific Pipeline Project	1992
Arrington, Cindy and Nancy Sikes	8255	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project	2006
Bonner, Wayne H. and Christeen Taniguchi	7276	Records Search Results and Site Visit for Sprint Telecommunications Facility Candidate La60xc514a (at&t/gil's Muffler) 18437-1/2 Roscoe Boulevard, Reseda. Los Angeles County, California	2004
Bonner, Wayne H.	8200	Indirect APE Historic Architectural Assessment for Sprint Telecommunications Facility Candidate La60xc514a (at&t/gil's Muffler) 18437-1/2 Roscoe Boulevard, Reseda. Los Angeles County, California	2004
Dames and Moore	160	Phase I Cultural Resources Survey Fiber Optic Cable Project Burbank to Santa Barbara, California for US Sprint Communications Company	1988
Foster, John M.	6599	Historic Resource Evaluation Report Mason Avenue At-grade Crossing and Safety Improvements Project, Los Angeles City, California	2002

Author	Report (LA-)	Description	Date
Martorana, Dean	11645	Verizon Wireless-Lindly Avenue, 7806 Reseda Boulevard, Los Angeles, CA	2011
Maxon, Patrick	11606	Phase I Cultural Resources Assessment, Sylmar Ground Return Replacement Project, Los Angeles County, California	2011
Peak and Associates, Inc.	2645	Class 3 Cultural Resource Assessment of the Proposed Carpintera and Southern Reroutes, Santa Barbara, Ventura, and Los Angeles Counties, California	1991
Romani, Gwendolyn R.	4162	Results of Phase I Archaeological Survey Located at 7915 Lindley Avenue, Reseda, Los Angeles County, California	1998

Previously Recorded Cultural Resources Site Records

The records search also indicated that a single cultural resource has been previously recorded within 0.5 mile of the project area (Table 2). This resource is just north of the project area, along Roscoe Boulevard between Reseda Boulevard and Etiwanda Avenue. This resource (P-19-187333) consists of two commercial buildings built in 1955. According to the site records, the resource was determined ineligible for the NRHP by consensus through the Section 106 process; however, the resource has not been evaluated for state or local significance.

Table 2. Previously Recorded Archaeological Sites within 0.5 Mile of the Project Area

Primary Number (P-19-)	Site Type	Time Period	Eligibility
187333	Commercial Building	Historic	Ineligible for NRHP determined by Section 106 process, not evaluated for CRHR or local listings

In addition, a search of the HRI, the California Historic Landmarks, and the Los Angeles Cultural Monuments did not identify any resources within a 0.5-mile radius of the project area.

NATIVE AMERICAN CONTACT PROGRAM

As part of this investigation, a sacred lands file (SLF) search of the project area and vicinity was requested from the Native American Heritage Commission (NAHC). A letter was prepared and mailed to the NAHC on September 10, 2013. The letter requested that an SLF check be conducted for the proposed project and that contact information be provided for Native American groups or individuals that may have concerns about cultural resources in the project area. The NAHC

responded to the request with a letter dated September 12, 2013. The letter stated that a records search of the NAHC SLF, "failed to indicate the presence of Native American traditional cultural place(s)" in the project area and that the "absence of archaeological or Native American sacred places/sites does not preclude their existence." The letter also provided a list of Native American groups to contact regarding their interests in this proposed project.

Letters were mailed on September 25, 2013, to the six parties indicated on the contact list: Ron Andrade of the Los Angeles City/County Native American Indian Commission, Delia Dominguez of the Kitanemuk & Yowlumne Tejon Indians, Beverly Salazar Folkes and Randy Guzman-Folkes of the Tongva Ancestral Territorial Tribal Nation, Larry Ortega of the Fernandeno Tatavium Band of Mission Indians, and John Valenzuela of the San Fernando Band of Mission Indians (Table 3). Maps depicting the project area and response forms were attached to each letter. Follow-up phone calls were made on October 8, 2013. John Valenzuela indicated that the project area was not within the traditional territory of the San Fernando Band of Mission Indians and asked that AECOM archaeologists contact Larry Ortega. Larry Ortega confirmed receipt of the contact letter, stated that he had no concerns about the project at this time, and requested that LADWP proceed with caution. Beverly Salazar Folkes indicated that the entire Reseda area is a sensitive area to Native peoples and recommended that a Native monitor be on-call for all new excavations. For complete details on the Native American Contact Program, see Appendix B.

Table 3. Native American Contact Program

Native American Contact	Letter Sent	Date of Reply	Follow-Up Phone Call	Notes
Beverly Salazar Folkes	9/25/2013	N/A	10/08/2013; left message with husband 10/09/13; spoke with Ms. Salazar	Ms. Salazar Folkes states that the Reseda area is "a dwelling area for Native people," and states that the "whole area encompasses a sensitive area." Ms. Salazar Folkes recommends a Native monitor at least be on-call for all new excavations.
Chairperson Larry Ortega Fernandeno Tataviam Band of Mission Indians	9/25/2013	N/A	10/08/2013	Chairperson Larry Ortega confirmed receipt of the letter and stated that at this time he has no concerns, but asked that LADWP "proceed with caution."
Director Ron Andrade L.A. City/County Native American Heritage Commission	9/25/2013	N/A	10/08/2013; left answering machine message	N/A
Chairperson Delia Dominguez Kitanemuk & Yowlumne Tejon Indians	9/25/2013	N/A	10/08/2013; left voicemail message	N/A

Native American Contact	Letter Sent	Date of Reply	Follow-Up Phone Call	Notes
Chairperson John Valenzuela San Fernando Band of Mission Indians	9/25/2013	N/A	10/08/2013; left voicemail message on cell phone 10/10/2013; Mr. Valenzuela returned our phone call	Mr. Valenzuela states that his historical area does not include the Northridge area, and he does not interfere in that geographical area. He says his historical area is the High Desert, in the area of Barstow and Hesperia. He asked we contact Mr. Larry Ortega of the Fernandeno Tataviam Band.
Randy Guzman-Folkes	9/25/2013	N/A	10/08/2013; left voicemail message on cell phone	N/A

PALEONTOLOGICAL RECORDS SEARCH

A paleontological records search was requested from the Los Angeles Natural History Museum on September 10, 2013, to determine the level of paleontological sensitivity within the project area. The request was accompanied by a project description and a map of the project area.

Results

Paleontological findings are pending receipt of letter from Vertebrate Paleontology Division of the Natural History Museum of Los Angeles County.

HISTORIC MAPS

Historic map research was conducted to gain an understanding of the level of disturbance in the area as well as identify possible locations of archaeological sensitivity within the project area. Because of its late development, historic Sanborn Fire Insurance (Sanborn) maps do not exist for the project area. However, research of historic USGS topographic maps and aerial photographs posted on historicaerials.com provides insight into the development of the project area itself as well as the surrounding area. The project area is shown on the Calabasas 1903; the Zelzah 1928, 1932, and 1941; and the Canoga Park 1952, 1976, and 2012 USGS maps.

On these maps, the project area is undeveloped farmland in 1903. In 1928, Zelzah appears on the quadrangle of the same name. On the 1941 Zelzah map, the Runnymeade Poultry Colony appears south of Strathern Street (Plate 4). Its many henhouses appear east of Lindley Avenue. The project area remains almost entirely undeveloped. Growth across Zelzah/Northridge and Reseda is gradual during these years, but aerial photographs show explosive growth beginning in the early 1950s.

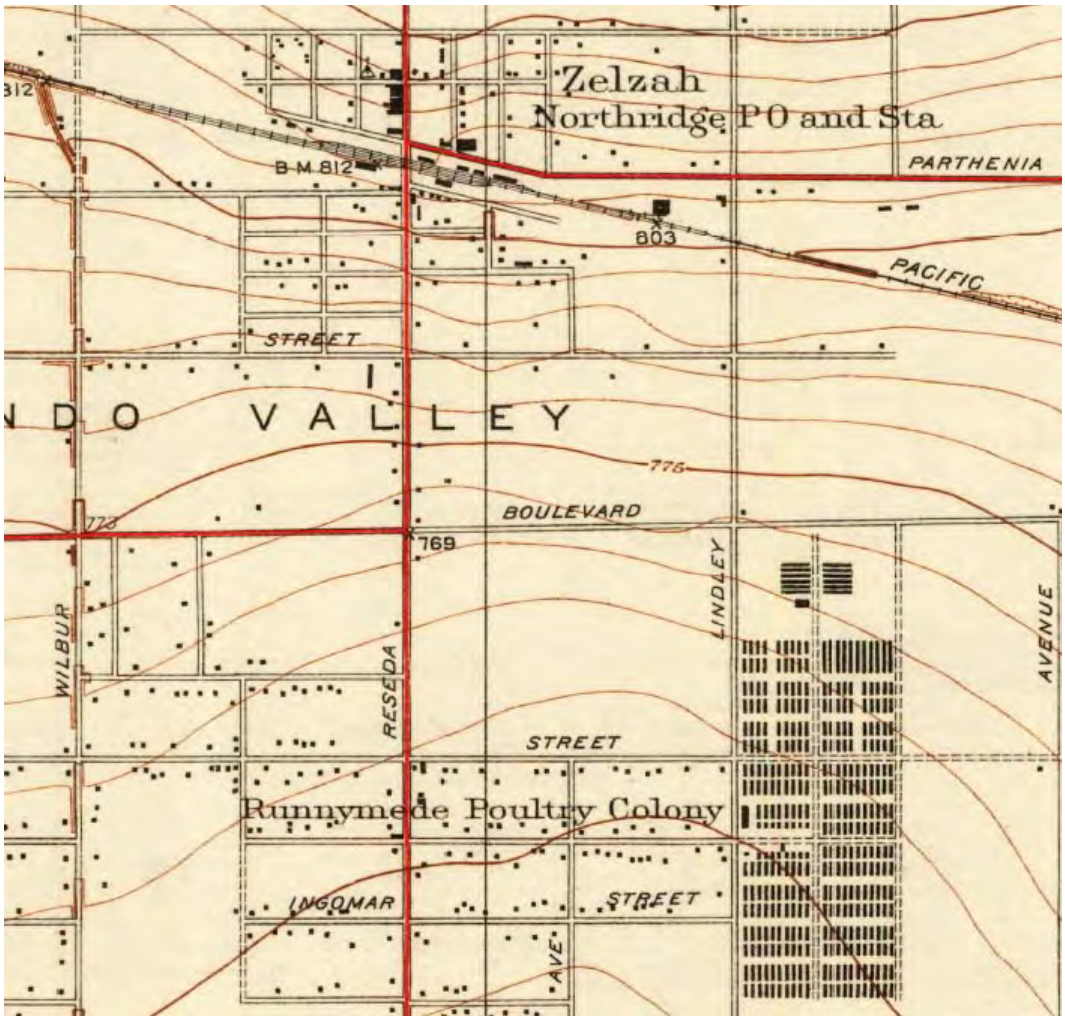


Plate 4. Zelzah 1941 USGS Topographic Map, Showing Project Area, Zelzah, and Runnymede Poultry Colony.

Reseda Boulevard

Reseda Boulevard is the oldest and most important road in the project footprint. Of the roads under study, only Reseda Boulevard appears on the 1903 Calabasas map. By the issuance of the 1928 Zelzah map, Reseda Boulevard is the main north-south street in the new settlement. It was paved in the early 1930s (San Fernando Valley Magazine 1975:10). A few houses appear along Reseda Boulevard on the 1941 map, but the boulevard passes through lands that remain largely undeveloped.

In the 1952 aerial photograph, Reseda Boulevard runs through farmland. A few houses and farm buildings appear sprinkled here and there in the project vicinity, but they are far back from the Boulevard. The boulevard remains undeveloped in the 1959 photograph, and some of the farm buildings have been destroyed. By the 1972 aerial photograph, the apartment buildings northwest of the intersection with Strathern Street appear, as does the large commercial structure northeast of that

intersection. The first Northridge Hospital Medical Center buildings northeast of the intersection with Cantara Street, a commercial structure on the southeast corner of Roscoe and Reseda, and a commercial structure on the southwest corner of that intersection appear in 1972; these buildings still stand. The structure northwest of Reseda and Lanark appears in 1977, while all other buildings appear after that date.

Roscoe Boulevard

Roscoe Boulevard does not appear on the 1903 Calabasas map but does appear on the 1928 Zalzeh map. On the 1928 and 1932 maps, the road is called Roscoe Street. By the 1941 Zalzeh map, it has its present name of Roscoe Boulevard. The first structures on Roscoe in the project vicinity appear on the 1928 map, near the northwest and southwest corners of Roscoe and Reseda Boulevard.

Roscoe Boulevard appears to be a small road in the 1952 aerial. A few houses stand at the two northern corners of the intersection with Reseda Boulevard and on the southwestern corner of the intersection with Reseda Boulevard. Farmhouses stand well back on the property on the southeastern corner. The buildings southeast of the intersection are all demolished by the 1959 aerial. The buildings at the other three corners have all been replaced by other buildings by the time of the 1980 aerial.

Cantara Street

Cantara Street does not appear on the 1941 Zalzeh map but appears on the 1952 Canoga Park map. No buildings appear on Cantara Street on that map.

The 1952 aerial photograph shows the entire area on either side of Cantara Street to be farmland. Cantara Street appears to be a dirt road. By the 1959 aerial photograph, Darby Avenue and Darby Place, which intersect Cantara Street, have been established and paved. A neighborhood of single-family homes appears around Darby Avenue, Darby Place, and along the south side of Cantara Street. A large commercial building appears at the northwest corner of Etiwanda and Cantara Streets. This building is still in existence in the 1972 aerials, but was destroyed and replaced with a parking lot in the 1977 aerial. By the 1972 aerial, the large apartment complexes between Darby Avenue and Reseda Boulevard were constructed. The southwest corner of Cantara Street and Reseda Boulevard remains an open field and then a parking lot through the 1980 photograph.

Etiwanda Avenue

Like Cantara Street, Etiwanda Avenue first appears on the 1952 Canoga Park map. However, no street appears in the 1952 aerial. By the time of the 1959 aerial, Etiwanda Avenue between Roscoe and Strathern was blazed and paved. In the 1959 aerial, single family residences of the same size and style as those around Cantara Street and Darby Avenue and Darby Place appear on either side of Etiwanda Avenue; these still exist today.

Strathern Street

Strathern Street does not appear in the project area on the 1932 Zalzeh map, although segments of what would be Strathern Street are seen elsewhere. Strathern appears along its present route through the project area on the 1941 Zalzeh map. Buildings, possibly associated with the Runnymede Poultry Colony, line its south side.

Strathern Street appears to be a minor road in the 1952 aerial. Small houses line the south side of the street between Reseda Boulevard and the future route of Etiwanda Avenue, and some of these houses seem to appear throughout the sequence of aerials to the present. The north side of Strathern Street was developed after 1952. Small single-family residences appear on the west side of Strathern Street west of Darby Avenue beginning in 1959. The large apartment buildings on the east end of Strathern Street appear in the 1972 aerial. The northwest corner of Strathern Street and Reseda Boulevard is undeveloped in 1959, but commercial structures appear in 1972 and the same buildings appear to exist today. A commercial structure emerges at the southeast corner of Strathern Street and Reseda Boulevard in the 1972 photograph, but is razed by the 1977 photo.

SURVEY METHODS AND RESULTS

SURVEY METHODOLOGY

Cultural Resources Survey

While several previous archaeological surveys were conducted within the vicinity, the entirety of the project area has never been surveyed; thus, a survey of the project area was conducted by Linda Kry and Frank Humphries on September 18, 2013. As the entire project area is paved, a windshield survey was conducted along all the project segments (see Figure 3). While the proposed undertaking includes installation of water pipelines below the ground surface, the survey focused on the archaeological investigation. The built environment will not be impacted by the proposed project; therefore, the survey and evaluation of built resources were excluded from this investigation.

RESULTS

Project cultural resource specialists performed a windshield survey of the proposed project area on September 18, 2013. The survey area consisted of areas proposed for the replacement of water distribution main within the San Fernando Valley area of the City of Los Angeles. The survey area was entirely within the public street rights-of-way in urbanized and fully developed areas in the Northridge community and includes portions of Reseda Boulevard, Etiwanda Avenue, Cantara Street, and Strathern Street (see Figure 3). The goals of the survey were to identify any previously recorded or previously unknown cultural resources within the survey area and to evaluate potential for any buried resources.

There were no visible ground soils to assess as the project footprint is entirely paved.

SUMMARY

The survey of the study area did not result in the identification of any previously unknown archaeological resources. However the project will parallel two resources that are historic in age, including commercial buildings (P-19-187333) located near the intersection of Roscoe and Reseda Boulevards, and the Northridge Hospital Medical Center (Plates 5 and 6). As the project will not result in any direct or indirect impacts to these resources, they were not evaluated as part of this project.

Plate 5. Resource P-19-187333, Gil's Muffler, View Northwest.

Plate 6: Northridge Hospital Medical Center, View Southeast.

Potential for Archaeological Resources

Review of previous investigations in the vicinity of the project and of the prehistoric context for the area provides an understanding of the potential for encountering prehistoric and historic sites in the project area. Subsequent land use is an essential factor in whether archaeological remains have been preserved.

As described in the context section of this report, the location of the project area is in the vicinity of Mission San Fernando, and prehistoric villages have long been rumored or documented as being located in the vicinity of the project area. The project area's location relative to the nearby water sources would have provided access to important resources during all periods of prehistory. Subsequent land use has included modern and historic development. In addition, the project area includes Reseda Boulevard, Roscoe Boulevard, Etiwanda Avenue, Cantara Street, and Strathern Street, all dating between the early 1900s to the early 1950s. It is possible that archaeological resources could be buried beneath the ground surface, especially in areas where development has included only minimal ground disturbance where the roadway may have effectively capped buried prehistoric or historic resources.

MANAGEMENT RECOMMENDATIONS

REGULATORY SETTING

Cultural resources in California are protected by a number of federal, state, and local regulations, statutes, and ordinances. Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance. State and federal laws use different terms for cultural resources. California state law discusses significant cultural resources as "historical resources," whereas federal law uses the terms "historic properties" and "historic resources." In all instances where the term "resource" or "resources" is used, it is intended to convey the sense of both state and federal law. The proposed project is subject to CEQA; therefore, the CRHR is discussed below.

California Register of Historical Resources

The CRHR was created to identify resources deemed worthy of preservation on a state level and was modeled closely after the NRHP. The criteria are nearly identical to those of the NRHP but focus on resources of statewide, rather than national, significance. The CRHR consists of properties that are listed automatically as well as those that must be nominated through an application and public hearing process.

The criteria for eligibility of listing in the CRHR are based on NRHP criteria but are identified as 1 through 4 instead of A through D. To be eligible for listing in the CRHR, a property must be at least 50 years of age and possess significance at the local, state, or national level, under one or more of the following four criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; or
2. It is associated with the lives of persons important to local, California, or national history; or
3. It embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values; or
4. It has yielded, or has the potential to yield, information important in the prehistory or history of the local area, California, or the nation.

In addition to meeting one or more of the above criteria, historic resources eligible for listing in the CRHR must retain enough of their historic character or appearance to be able to convey the reasons for their significance. Such integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association.

RECOMMENDATIONS

Paleontological Recommendations

Paleontological findings are pending receipt of letter from Vertebrate Paleontology Division of the Natural History Museum of Los Angeles County.

Archaeological Recommendations

Based on the results of the archival research and survey, archaeological resources may be encountered during ground-disturbing activities for the proposed project. Ground disturbance required for the proposed project will not exceed 5 feet in depth. If archaeological resources are encountered during ground-disturbing activities, LADWP will contact a qualified archaeologist to evaluate and determine appropriate treatment for the resource in accordance with PRC Section 21083.2(i). If any archaeological resources are encountered during ground-disturbing activities, work will be temporarily halted in the vicinity of the find and the archaeologist will be called to the project site to examine and evaluate the resource in accordance with the provisions of CEQA. If any Native American cultural material is encountered within the project site, consultation with interested Native American parties will be conducted to apprise them of any such findings and solicit any comments they may have regarding appropriate treatment and disposition of the resources. If human remains are discovered, work in the immediate vicinity of the discovery will be suspended and the Los Angeles County Coroner contacted. If the remains are deemed Native American in origin, the Coroner will contact the NAHC and identify a Most Likely Descendant pursuant to PRC Section 5097.98 and CCR Section 15064.5. Work may be resumed at the landowner's discretion but will only commence after consultation and treatment have been concluded. Work may continue on other parts of the project while consultation and treatment are conducted.

REFERENCES CITED

Arnold, Jeanne E., Michael Walsh, and Sandra E. Hollimon
2004 The Archaeology of California. *Journal of Archaeological Research* 12(1):1–73.

Balzar, John
2006 We Gave Birth to the Signaler. *Los Angeles Times.* 3 December:S7. Los Angeles.

Bean, Lowell John, and Charles R. Smith
1978 Gabrielino. In *Handbook of North American Indians*, Vol. 9, edited by Robert F. Heizer, pp. 538–562. Smithsonian Institution, Washington, D.C.

Erlandson, Jon M.
1994 *Early Hunter-Gatherers of the California Coast*. Plenum Press, New York.

Gentilcore, R. Louis
1961 Missions and Missions Lands of Alta California. Annals of the Association of American Geographers 51 (1): 46-72.

Gumprecht, Blake
1999 *The Los Angeles River: Its Life, Death and Possible Rebirth.* John Hopkins University Press, Baltimore, MD.

Hawthorne, Christopher
2006 Hooray for Sprawlywood. *Los Angeles Times.* 3 December:S6. Los Angeles.

Historic Aerials
2013 Historic Aerials and Topographic Maps. Available online: http://www.historic aerials.com. Accessed September 17–18, 2013.

HealthSpeak
2006 Northridge Hospital Medical Center: 50 Years of Making Miracles. Spring (50th Anniversary Issue). Los Angeles, California.

Hoover, Mildred Brooke, Hero Eugene Rensch, Ethel Grace Rensch, William N. Abeloe, and Douglas E. Kyle
1990 *Historic Spots in California.* Stanford: Stanford University Press.

Hume, Olive
1931 Nomenclature in the San Fernando Valley. *Van Nuys News* 25 June: 1, 4.

Jackson, Robert H.
1999 Agriculture, Drought & Chumash Congregation in the California Missions (1782-1834), *California Mission Studies Association*. Articles, May Newsletter.

Keffer, Frank McCleunan
1934 History of San Fernando Valley. San Fernando Valley, CA: Stillman Printing Company.

Kroeber, Alfred L.
1925 Handbook of Indians of California. *Bureau of American Ethnology Bulletin 78*, Smithsonian Institution, Washington D.C.

LAPL. *See* Los Angeles Public Library.

Link, Tom
1991 *Universal City, North Hollywood: A Centennial Portrait*. Windsor publications Inc. Chatsworth, CA.

Los Angeles Public Library (LAPL)
1918 Aerial View of Northridge, Then Known as Zalzeh. Available online: http://photos.lapl.org/carlweb/jsp/FullRecord?databaseID=968&record=8&controlNumber=25736. Accessed September 18, 2013.

MacMillan, Dianne
1996 *Missions of the Los Angeles Area*. Lerner Publications Company, Minneapolis, MN.

McCawley, William
1996 *The First Angelinos: The Gabrielino Indians of Los Angeles.* Malki Museum Press. Banning.

Meyer, L.
1981 *Los Angeles, 1781–1981*. A special bicentennial issue of California history, Spring 1981. California Historical Society, Los Angeles.

Phillips, George Harwood
1976 Indian Paintings from Mission San Fernando: An Historical Interpretation. In *The Journal of California Anthropology*, vol. 3, no. 1 pp. 96–100.

Reid, Hugo
1939 [1852] Letters on the Los Angeles County Indians. In *A Scotch Paisano in Old Los Angeles*, by Susanna Bryant Dakin, pp. 215–286. University of California Press.

1977 [1851] The Decay of the Mission. In *Los Angeles, Biography of a City*, edited by John Caughey and LaRee Caughey, pp. 102–104. University of California Press. Berkeley.

Robinson, W. W.
1942 *San Fernando Valley, A Calendar of Events.* Title Guarantee and Trust Company. Los Angeles, CA.

1961 *The Story of San Fernando Valley*. Title Insurance and Trust Company. Los Angeles, CA.

1963 Myth-Making in the Los Angeles Area. *Southern California Quarterly* 15(1):83–94.

1979 *Land in California: The Story of Mission Lands, Ranchos, Squatters, Mining Claims, Railroad Grants, Land Scrip, Homesteads.* University of California Press, Berkeley, CA.

San Fernando Valley Magazine

1975 The Romantic History of Northridge, 1769–1975. September: 30-page insert.

Shipley, William F.

1978 *Native Languages of California*, Vol. 9, edited by Robert F. Heizer, pp. 80–90. Smithsonian Institution, Washington, D.C.

State of California Office of Historic Preservation

1990 *Archeological Resource Management Reports (ARMR) Guidelines: Recommended Contents and Format*. Department of Parks and Recreation, State of California, Sacramento.

Strong, James

2007 *Strong's Exhaustive Concordance of the Bible: Updated and Expanded Edition.* Peabody, MA: Hendrickson Publishers, Inc.

Sugranes, Eugene, C.M.F.

1909 *The Old San Gabriel Mission*. Father Eugene Sugranes, Los Angeles, CA.

United States Department of Interior Geological Survey (USGS)

1903 Calabasas 15' Quadrangle. Reston, VA: U.S. Department of the Interior.
1928 Zalzeh 7.5' Quadrangle. Reston, VA: U.S. Department of the Interior.
1932 Zalzeh 7.5' Quadrangle. Reston, VA: U.S. Department of the Interior.
1941 Zalzeh 7.5' Quadrangle. Reston, VA: U.S. Department of the Interior.
1952 Canoga Park 7.5' Quadrangle. Reston, VA: U.S. Department of the Interior.
1976 Canoga Park 7.5' Quadrangle. Reston, VA: U.S. Department of the Interior.
2012 Canoga Park 7.5' Quadrangle. Reston, VA: U.S. Department of the Interior.

Van Nuys News

1929 World's Largest Poultry Plant Produces Average of Two Million Eggs Every Month. 20 September: 1.

Wallace, William J.

1955 A Suggested Chronology for Southern California Coastal Archaeology. *Southwestern Journal of Anthropology* 11(3):214–230.

Warren, Claude N.
1968 Cultural Traditions and Ecological Adaptation on the Southern California Coast. In *Archaic Prehistory in the Western United States*, edited by Cynthia Irwin-Williams. Eastern New Mexico University Contributions in Anthropology 1(3):1–14.

Wilkman, Nancy, and Jon Wilkman
2006 *Picturing Los Angeles.* Gibbs Smith Publishers, Salt Lake City.

Wright, Ralph B., editor
1992 *California's Missions.* Hubert A. Lowman. Arroyo Grande, California.

APPENDIX A

RESUMES

Marc A. Beherec, PhD, RPA
Project Archaeologist

Education
PhD, Anthropology, University of California, San Diego, San Diego, CA, 2011
MA, Anthropology, University of California, San Diego, San Diego, CA, 2004
BA, Anthropology (Geology minor), University of Texas, Austin, Austin, TX, 2000

Professional Affiliations
Member, Register of Professional Archaeologists
Member, Society for American Archaeology
Member, Society for California Archaeology
Member, California Mission Studies Association

Dr. Marc Beherec has been involved in the field of cultural resources management for over a decade. He has worked throughout the southwest on projects within Federal and State regulatory framework, and is experienced in the identification and analysis of both prehistoric and historic era artifacts. Dr. Beherec also has extensive experience in Archaic period sites in the western US as well as archaeological analyses in Jordan. For the past year and a half, he has served as Monitoring Coordinator and Lead Monitor for the NextEra Genesis Solar Energy Project and then for Los Angeles Metropolitan Transportation Authority projects.

Selected Project Experience

Los Angeles County Metropolitan Transportation Authority Compliance Monitoring (Los Angeles Metro)
Monitoring Coordinator for the cultural resources compliance monitoring of multiple projects within the greater Los Angeles area. Tasks involve the scheduling and coordination of between 5 and 25 concurrent archaeological monitors on diverse construction efforts throughout the project site; compilation, QA/QC, and delivery of daily monitoring logs for all on-site monitors; attending project construction scheduling and Health and Safety meetings; conducting and documenting daily monitoring crew Health and Safety meetings; serving as liaison between archaeological monitors, construction crew and client project team; ensuring overall cultural resources compliance with the permitted conditions of the project.

NextEra Genesis Solar Energy Project Cultural Resources Compliance Monitoring
Monitoring Coordinator and Lead Monitor for the cultural resources compliance monitoring of a 2000-acre solar power project under the jurisdiction of the California Energy Commission and Bureau of Land Management (BLM) on BLM land in the western Mojave Desert. Tasks involve the scheduling and coordination of between 5 and 25 concurrent archaeological monitors on diverse construction efforts throughout the project site; compilation, QA/QC, and delivery of

daily monitoring logs for all on-site monitors; attending project construction scheduling and Health and Safety meetings; conducting and documenting daily monitoring crew Health and Safety meetings; serving as liaison between archaeological monitors, construction crew and client project team; ensuring overall cultural resources compliance with the permitted conditions of the project.

San Bernardino National Forest San Jacinto District Archaeologist, Idyllwild, CA
Archaeologist assigned to Idyllwild Ranger Station, San Jacinto District, San Bernardino National Forest, Riverside County, California. Assisted District Archaeologist in cultural resources efforts, including supervision of crews conducting cultural resources inventories of mountainous terrain, GPS documentation of resources, preparation of DPR 523 forms, research of prehistoric and historic artifact parallels, including projectile point typologies, makers' marks, and tin can typologies, and authoring technical reports. Work was performed before joining this firm.

Border Field State Park, San Diego County, CA
Excavated coastal Early Archaic sites in and adjacent to Border Field State Park. Work was performed before joining this firm.

Lake Meredith National Recreational Area Cultural Resources Surveys, Amarillo, TX
Archaeologist for intensive pedestrian surveys of the Lake Meredith National Recreational Area, an area along the the Canadian River with documented human occupation for over 12,000 years. Relocated previously documented archaeological sites and documented newly identified sites. Work was performed before joining this firm.

East Texas Pipeline Survey, Austin, TX
Crew Chief for intensive pedestrian survey of a new east Texas pipeline corridor. Efforts included field survey, shovel testing, site recordation, and GPS operation. Work was performed before joining this firm.

Camp Swift Archaeological Project, Bastrop, TX
Archaeologist for test excavations at Camp Swift Army National Guard Base. Excavated test units at eighteen sites, documented excavations, and drilled rock cores for archaeomagnetic dating research. Work was performed before joining this firm.

Gault Site Archaeological Project, Bell County, TX
Excavated at the Gault Paleoindian site (41BL323), completed documents (unit forms and maps, profile maps, Munsell notations, artifact catalogs), conducted preliminary lithic analysis, measured lithic blades for statistical studies, and supervised student volunteers in washing lithics. Work was performed before joining this firm.

Christy Dolan, MA, RPA
Historical Archaeologist

Education
MA, Anthropology, Concentration Historical Archaeology, College of William and Mary, 1994
BA, History and Anthropology, University of New Hampshire, 1985
Museum Studies Certificate Program, Harvard University

Professional Registration
Register of Professional Archaeologists (RPA)

Affiliations
Member, Society for Historical Archaeology
Member, Society for California Archaeology

Christy Dolan has more than 20 years of experience in the study of historic period archaeological and architectural resources. Her archaeological experience includes document research; surveys; and excavations of 18th, 19th, and 20th century sites in California, Arizona, Washington, Nevada, Colorado, Missouri, Virginia, Washington, D.C., and throughout New England. She has authored documents that represent the results of historic studies, surveys, inventories, evaluations, and preservation plans. Her work with several cultural resource management firms has broadened her knowledge of procedures for NEPA, NHPA, and CEQA and has allowed her to work with a variety of federal agencies.

Ms. Dolan has conducted numerous architectural surveys and is conversant with architectural styles and terminology for a broad array of structures, including military, industrial, municipal, commercial, and residential buildings. She has also completed many studies of the built environment, including National Register nominations, Historic American Building Survey (HABS), Historic American Engineering Record (HAER), and National Historic Landmark nominations. She has a broad knowledge of material culture, building styles, and structural engineering practices in the 19th and 20th centuries.

Project Experience

Energy and Transmission Projects

Foster Wheeler North Baja Pipeline Project,
Ehrenberg, Arizona to Mexican Border
Historical archaeologist on an international pipeline. Responsible for archival research, overseeing artifact analysis, site evaluation, and data recovery. Historic sites included a railroad town, a stage stop, historic roads, and numerous can scatters. [2/1999 – 5/2003]

Sempra Energy Coronado 69 kV Utilities Relocation Area Monitoring, San Diego, CA
As Historical Archaeologist, prepared historic analysis for report documenting two buried historic features discovered during monitoring. [5/2004 – 12/2004]

Imperial Irrigation District M-line Pole Replacement Survey, Imperial Valley, CA
As Historical Archaeologist, conducted historical research and archaeological survey of 40-mile segment of transmission line that stretched between El Centro and Niland in southern California. Recorded seven sites and three isolates, including historic trash deposits, an early 20th century railroad stop, and debris from railroad construction camps. Prepared Cultural Resources Inventory Report with the findings. [6/1999 – 12/2000]

Tuscarora Gas Transmission Line Nontechnical Report, OR, CA, and NV
As Historical Archaeologist, wrote historical section and contributed to the preparation of a brochure that interpreted the archaeological investigations for the 229-mile Tuscarora Gas Transmission Line project. [5/1997 – 12/1997]

LADWP On-Call, Los Angeles, CA
Multiple on-call projects. On one project, updated National Register nomination for the Boulder Transmission Lines carry energy from Hoover (Boulder) Dam to Los Angeles. [5/1997 – 12/2002]

Transportation Projects

Southern Nevada Supplemental Airport EIS, Las Vegas and Primm, NV
Manager for large alternatives study for a proposed supplemental airport for Las Vegas. Oversaw archaeological and architectural reconnaissance surveys. Upcoming work includes archaeological survey of 17,000 acres in the Nevada desert. [5/2006 – 9/2010]

City of Davis Railroad Depot Survey, Davis, CA
As Archaeologist, conducted archaeological survey and prepared an HPSR for a late 19th century railroad depot. [5/1998 – 6/1999]

City of Seal Beach Marina Drive Bike Path, Seal Beach, CA
As Historian/Archaeologist, conducted National Register eligibility study for several historic buildings under Caltrans guidelines. Prepared HRER with the findings and coordinated with Caltrans to define APE. [5/2003 – 6/2004]

City of Palm Springs Indian Canyon Drive and Bridge Widening, Palm Springs, CA
As Historian, conducted National Register eligibility study for several historic buildings and structures under Caltrans guidelines. Prepared HRER with the findings. [2/2003 – 6/2003]

City of National City Plaza Boulevard Widening, National City, CA
As Historian/Archaeologist, conducted National Register eligibility study for several historic buildings and structures under Caltrans guidelines. Prepared HRER with the findings Completed archaeological survey and records search and prepared ASR. As part of this study, conducted Native American contact program. [9/1999 – 12/2000]

City of Oceanside Pacific Street Bridge Architectural and Cultural Resources Survey and Evaluation, San Diego, CA
As Historian, conducted historic research and archaeological survey, and prepared HASR and ASR. Assessment conducted following Caltrans guidelines. [5/2003 – 5/2004]

County of San Diego South Santa Fe Avenue Reconstruction Project, Vista, CA
As Historian, conducted National Register eligibility study for several historic buildings and structures under Caltrans guidelines. Prepared HRER with the findings. [5/1999 – 9/2010]

Coronado Bridge Retrofit Archaeological Monitoring, San Diego, CA
Oversaw archaeological monitoring for the retrofit of several supports for the Coronado Bridge. Coordinated with Caltrans and PCL Constructors. This work will be documented in a monitoring report at its conclusion. [7/2000 – 11/2000]

City of Chula Vista Palomar Street Widening Project, Chula Vista, CA
As Historian, surveyed several blocks surrounding a portion of Palomar Street for the City of Chula Vista. Recorded several structures and buildings, three of which were part of a gas station that was in operation in the 1930s. Reported the results in several documents prepared in the Caltrans format. These included a Negative ASR, an HASR, and an HPSR. [6/1996 – 7/1997]

Caltrans and City of San Diego SR-56 Cultural Resource Study, Addendum Technical Reports, San Diego County, CA
As Historical Archaeologist, conducted archaeological testing of late 19th century homestead site. [5/1996 – 4/1997]

City of Encinitas Manchester Avenue/Interstate 5 Interchange Historic Properties Survey, San Diego, CA
As Task Manager for Historic Resources, conducted historic research and compiled information for the historic background and the assessment of historic structures for the HASR. [4/2004 – 6/2005]

County of Los Angeles Arroyo Seco Bike Path Historic Property Survey Report, Los Angeles, CA
As Historic Resource Specialist, conducted an architectural survey and archival research of the stone-mortared and concrete-lined Arroyo Seco Flood Control Channel and associated bridges. Identified character-defining features of the channel and prepared a Historic Architectural Survey Report and portions of the Historic Property Survey Report. [5/2003 – 4/2005]

County of Los Angeles Arroyo Seco Bike Path Finding of Effects Documentation, Los Angeles, CA
As Historic Resource Specialist, oversaw preparation of the historic resources portion of a Finding of Effects for a proposed bike path in the Arroyo Seco Flood Control Channel. Used character-defining features identified during the preparation of a Historic Architectural Survey Report to help determine the effects. [9/2004 – 4/2005]

Federal/Military Projects

NPS Mission Santa Barbara Project, Santa Barbara, CA
As Historical Archaeologist, recorded archaeological remains at Mission Santa Barbara in order to revise National Historic Landmark forms and determine the boundaries. Conducted extensive mapping using AutoCad technology. [7/1996 – 8/1997]

NAVFAC Southwest National Register Eligibility Assessment for Naval Base Ventura County, Port Hueneme, CA
As Historic Resources Specialist, recorded and evaluated more than 40 buildings for eligibility for the NRHP. Conducted extensive research to provide a context for evaluation. [9/2004 – 9/2005]

NPS Jefferson National Expansion Memorial Environmental Impact Statement and General Management Plan Update, St. Louis, MO
As Task Manager for Archaeological Resources, worked with NPS to develop alternatives, conduct public meetings and prepare an Environmental Impact Statement for the Jefferson National Expansion Memorial and grounds in St Louis. Responsible for archaeological section for EIS and discussion in GMP of impacts to archaeological resources. [5/2008 – 12/2009]

NAVFAC Southwest El Centro Weapons Impact Scoring Set (WISS), El Centro, CA
As Project Manager for Historical Resources, worked on Cultural Resources Inventory for the proposed Weapons Impact Scoring Set (WISS) on Range 2512 of the Naval Air Facility, El Centro. Archaeological research included a records and literature search and an archaeological field survey to determine if cultural resources potentially eligible for the National Register of Historic Places would be affected by the proposed project or project alternative. [3/1996 – 4/1997]

Proposed Land Exchange and Georgetown Boathouse EIS, Washington, D.C.
As Historic Resource Specialist, prepared cultural sections of an EIS that examined the impacts to cultural resources under NEPA/DO12 and Section 106. Assisted client with SHPO consultation. [4/2007-12/2008]

NAVFAC Southwest Cultural Resource Inventory Survey at Salton Sea Test Base, Imperial County, CA
As Laboratory Director, oversaw laboratory analysis of artifacts collected during an evaluation program for 170 sites. Compiled tables and coordinated with specialists for complex analysis of artifacts. [4/1997 – 7/1999]

FEMA Disaster 1464-DR-TN, Nashville, TN
As Historic Resource Specialist, processed more than 1,000 projects related to repairs to damage caused in 56 counties by a tornado and associated storms in May 2003. Worked for 3 months on projects that included repairs to utility lines, buildings, bridges, culverts, drains, and other structures that sustained damage and were 50 years or older. Coordinated with SHPO to ensure that all projects being funded by FEMA complied with federal regulations. Conducted archaeological surveys in areas where ground disturbance was required and provided results to SHPO for concurrence. [5/2003 – 8/2003]

Eglin Air Force Base Architectural Inventory, Fort Walton Beach, FL
As Historian, conducted inventory of 150 military structures from World War II and the Cold War era. Created a site record for each structure and compiled the data into a database to be included in a report. [2/1998 – 12/2000]

U.S. Coast Guard Air Station San Francisco EA – Public Works Building, San Francisco, CA
As Historic Resources Specialist, conducted review of historic resources on Air Station San Francisco and prepared sections for an EA that evaluated the impacts of constructing a new public works

building. This included evaluating potential impacts from the demolition of a structure eligible for inclusion in the National Register of Historic Places. [4/1997 – 6/1998]

Poplar Point, Washington, D.C.
As Historic Resource Specialist, assisted client with SHPO consultation and prepared NEPA/DO12 and Section 106 cultural sections of an EIS that examined the impacts to cultural resources. [6/2009-4/2011}

NAVFAC Southwest Tustin Historic American Buildings Survey, Orange County, CA
As Historian, prepared written document and oversight of photographic documentation for two World War II-era blimp hangars. [5/1998 – 11/1999]

NAVFAC Southwest P-527 Historic Railroad Study, MCB Camp Pendleton, San Diego County, CA
As Historical Archaeologist, surveyed segment of historic railroad at Camp Pendleton. Systematically recorded the railroad ties, tie plates, rails, rail connectors, trestles, and associated artifacts. Prepared report on findings. [4/1997 – 5/1998]

NAVFAC Southwest HARP for the Fleet Antisubmarine Warfare Training Center, San Diego County, CA
As Historian, completed survey of 11 buildings in San Diego that predated 1947 and 50 Cold War-era buildings. Compiled data in a database program. [2/1996 – 12/1997]

NAVFAC Southwest Cultural Resource Phase I Inventory Report for Small Arms, Demolition Ranges, and Training Areas on San Clemente Island, Los Angeles County, CA
As Historical Archaeologist, inventoried historic resources on San Clemente Island including World War II-era military sites, Chinese abalone camps, and sites relating to the early ranching period on the island. [5/1999 – 8/1999]

NAVFAC Southwest Archaeological Survey, MCB Camp Pendleton, San Diego County, CA
As Historical Archaeologist, managed archaeological survey of target ranges at Camp Pendleton. [4/1997 – 12/1998]

NAVFAC Southwest Evaluation of Historic Sites and Eligibility for the NRHP, Naval Air Facility El Centro, CA
As Historical Archaeologist, investigated early 19th century historic sites related to early homesteading in Imperial Valley. Conducted a testing and evaluation program. [3/1996 – 6/1997]

Air Force Materiel Command Los Angeles Air Force Base Contextual Study, Los Angeles, CA
As Historian, conducted historic research at the Los Angeles Air Force Base, a Space and Missiles System Center. The information was used to create a contextual study for the base. [5/2001 – 7/2002]

Land Development Projects

Russell Lands Master Plan, Tallapoosa County, AL
As lead historian, conducted oral histories, archival research, and site visits for a private developer. Collected information was used to prepare sustainable and compatible master planning documents and inform design. (6/2009-8/2009)

Harper Lake Specific Plan; Cultural Resources Constraints Report, San Bernardino County, CA
As Historical Archaeologist, conducted site visit and prepared report identifying archaeological sites and constraints for a proposed 3,300-acre Specific Plan area near Barstow, California. [2/2007 – 9/2007]

State of California Department of General Services (DGS) Caltrans Headquarters Archaeological Monitoring, San Diego, CA
As Historical Archaeologist, supervised monitoring program for Caltrans District 11 new headquarters building. Oversaw staff monitoring soil remediation activities as well as construction and demolition activities. Coordinated monitoring with construction contractor and consulted with SHPO on discoveries. [5/2000 – 8/2003]

Centre City Development Corporation Ballpark Monitoring, San Diego, CA
As Historical Archaeologist, supervised the archaeological monitoring for 12-block area in downtown San Diego. Recorded several features related to early settlement of San Diego. Responsible for all monitoring activities, related excavation, and for responsiveness to the needs of the client and the schedule. [1/1998 – 12/2009]

DGS Caltrans Headquarters Cultural and Historical Research Report, San Diego, CA
As Historical Archaeologist, conducted historic research and prepared documentation for the Caltrans District 11 proposed building. Assessed potential for archaeological resources through intense historical research including a review of Sanborn fire insurance maps and aerial photographs for an area that was first settled in the late 19th century. Followed up with the creation of a research design and testing plan for archaeological resources. [5/2000 – 5/2001]

Potomac Annex/Navy Hill Building Rehabilitation and Utilities Relocation, Washington, D.C.
As Historical Archaeologist, oversaw Phase I and II investigations at the Navy Hill and Potomac Annex complex. The buildings are National Register eligible and the archaeological potential for these properties is high for both prehistoric and historic features. [1/2012-12/2013]

City of West Hollywood Pacific Design Center Cultural Resource Survey, West Hollywood, CA
As Historical Archaeologist, conducted historic research and prepared document assessing the potential for the presence of archaeological resources. Reviewed Sanborn fire insurance maps, early photographs, and historical accounts to determine the archaeological sensitivity for the property. [1/2002 – 2/2003]

Chapman University Cultural Resource Survey, Orange, CA
As Historical Archaeologist, performed an inventory of 25 properties within the historic urban core of Orange. Conducted historical research and architectural assessments for each property within the project area. Also assessed potential for the presence of subsurface cultural resources through review of Sanborn fire insurance maps. [5/2000 – 7/2001]

City of Los Angeles, Bureau of Engineering Public Safety Facilities Master Plan, Historical Assessment, Los Angeles, CA
As Project Manager, oversaw historical assessment of 1950s building that serves as the Los Angeles Police headquarters. Also assessed associated landscaping. The landscaping and building were designed by architect Welton Beckett. Prepared the technical report, which evaluated the resources and assesses impacts. [5/2004 – 9/2005]

City of Lathrop River Islands Architectural History Report, Lathrop, CA
As Historian, conducted fieldwork to record and evaluate early farming and ranching buildings in Lathrop. Resources within the project area included irrigation canals, early 20th century dairy, late 19th century railroad, and farming/ranching complexes from 1900-1950. Results were summarized for inclusion in an EIR. [1/2004 – 11/2005]

CCDC Ballpark Remediation, San Diego, CA
As Archaeologist, supervised the archaeological monitoring of 12-block area in downtown San Diego. Recorded archaeological features related to the industrial and domestic activities that began in the late 1800s. Currently conducting archival research utilizing census data and city directories that will be compiled with a GIS database to aid in the interpretation of the archaeological data. [1/1998 – 5/1999]

County of San Diego Courthouse Project, San Diego, CA
As Archaeologist, conducted archival research for a downtown San Diego block to determine the potential for archaeological features. Prepared a report with the findings and submitted it to the County of San Diego. Subsequent work focused on monitoring geotechnical trenching on this block. [1/1998 – 7/1999]

Catellus Development Corporation San Diego Army Barracks Project, San Diego County, CA
As Archaeologist, conducted historical research and test of mid-19th century Army barracks. Used both remote sensing and excavation methods. Prepared report on the findings. [2/1996 – 4/1998]

Burns and McDonnell Los Angeles County Courthouse EIR, Los Angeles, CA
As Historian, conducted archaeological and architectural survey of four city blocks. Conducted in-depth historic research for each of the blocks and recorded and assessed several buildings. Prepared technical reports and EIR sections with findings. [5/2000 – 8/2001]

Bosa Development Historical Research for Parcel 2 (Block M299/775) of the Santa Fe Depot Composite Site, San Diego, CA
As Historical Archaeologist, conducted archival research for a downtown San Diego block and former railroad freight yard to determine the potential for archaeological remains. Compiled data from Sanborn fire insurance maps, historic photographs, historic parcel maps, and railroad documents. Proposed a preexcavation trenching plan to explore archaeologically sensitive areas identified by the historic research. [9/1999 – 12/2000]

Chapman University California Cordage Company Historic American Buildings Survey (HABS), Orange, CA
As Project Manager for Historical Resources, oversaw the HABS documentation of an old industrial complex in Orange, California. This included extensive historic research, oral histories, large format photo-documentation, and documentation of the architectural features of the building. The end result was a comprehensive historic context, architectural description, and photographic depictions of the resource. [5/2003 – 12/2004]

USDA Forest Service Pine Hill Barracks Historic American Building Survey Documentation, San Diego, CA
As Historical Archaeologist, directed the investigation of HABS documentation for a Depression-era fire station. [3/1998 – 5/1999]

Sierra Pacific Industries/BLM Land Exchange Project, Weaverville, CA
As Historical Archaeologist, conducted archaeological survey and archival research of mining-period resources. [9/1996 – 12/1997]

Simpson Farms, San Diego County, CA
As Project Manager for Historical Resources, recorded and evaluated Simpson Farms, a farming complex that was originally constructed in the 1890s. Conducted historic research including a review of historic maps, photographs, newspaper accounts, and local histories. Oral interviews were also conducted to learn more about the original builders and alterations to the complex. [3/1999 – 5/2000]

Historic Preservation Projects

Mission San Juan Capistrano National Historic Landmark Nomination, San Juan Capistrano, CA
Revised nomination for the seventh California mission and the Old Stone Church, circa 1800. As Historical Archaeologist, conducted historical research of the 11 California mission properties to prepare the nomination form. [9/1996 – 5/1997]

National Park Service (NPS) Seacoast Fortifications Preservation Manual, San Francisco, CA
As Historian, conducted archival research and interviewed informants for the creation of a preservation manual for the Seacoast Fortifications at the San Francisco Presidio. [5/1998 – 5/1999]

City of San Diego Conditions Assessment Report for the San Diego Presidio, San Diego, CA
As Archaeologist, prepared report on the San Diego Presidio outlining past archaeological work, current conditions of the archaeological remains, and recommendations for short-term goals for preservation of the site. [5/2000 – 5/2001]

San Diego County Water Authority (SDCWA)Programmatic General Permit, San Diego County, CA
Assisted SDCWA with preparing a Programmatic Agreement with the Army Corps, SHPO, and interested parties. [8/2011 – 9/2012]

City of San Diego El Cuervo Adobe Conditions Assessment Report, San Diego, CA
As Historical Archaeologist, assembled team of specialists to prepare a conditions assessment of the El Cuervo adobe ruins in Los Peñasquitos Preserve. Prepared historic background and overview for report and presented results of the study to several interested groups. [1/2005 – 7/2005]

County of San Diego Black Canyon Road Bridge Historic American Engineering Record Documentation and Historic Preservation Plan, San Diego County, CA
As Historian, prepared Historic American Engineering Record documentation and Historic Preservation Plan for concrete bridge built in 1913. Conducted extensive historical research, including a patent search. [5/1998 – 12/1998]

ARG Walking Box Ranch Master Plan and Preservation Plan, Searchlight, NV
As Historical Archaeologist, conducted archaeological survey and prepared report to update the results of a previous survey of Walking Box Ranch, a ranch once owned by silent film stars Clara Bow and Rex Bell. Provided input into future use of the site and preservation of significant archaeological resources. [5/2007 – 7/2008]

UNiT Cumbres & Toltec Scenic Railroad Cultural Landscape and Archaeological Assessment, CO
As Historical Archaeologist, conducted reconnaissance survey of Colorado portion of the Cumbres & Toltec Scenic Railroad between Antonito and Cumbres. Identified archaeological sites, discussed their historic significance, and made recommendations for preservation and future interpretation.[8/2006 – 12/2007]

Water Projects

San Diego County Water Authority (SDCWA) Emergency Storage Project, San Diego County, CA
As Historical Archaeologist, supervised the archaeological investigations for an early homestead site in San Diego as well as investigations of the historical town of Foster. Created historic context, research design, and testing plan. Implemented testing plan and, based on those results, prepared a data recovery plan. [5/2000 – 12/2006]

SDCWA San Vicente Dam HAER, San Diego, CA
As Historian, conducted research and prepared HAER documentation for a gravity dam built in the 1930s. Coordinated large format photography of the structure. [3/2003 – 5/2004]

City of Riverside Canal Tunnel HAER, Riverside, CA
As Historian, conducted fieldwork to record and evaluate a 19-mile canal in Riverside that was scheduled to be upgraded and relined. Surveyed entire length of the late 19th century canal and provided map that identified the degree of integrity retained by the various

segments. Provided HAER documentation for two of the segments that retained the highest degree of integrity. This included a detailed history, large format photographs, and an architectural description. [4/2002 – 8/2002]

Selected Reports

From Peak to Playa: Class III Cultural Resources Survey and Evaluation for the Proposed Southern Nevada Supplemental Airport (Lead Author). Prepared for VHB by AECOM, San Diego (2010).

Archaeology and Cultural Landscapes; Cumbres & Toltec Scenic Railroad (with E. Russell). Prepared for UNiT, EDAW, Inc. San Diego (2006).

Harper Lake Specific Plan; Cultural Resources Constraints Report (with J. Hirsch and R. Apple). Prepared for ENSR International, EDAW, Inc. San Diego (2006).

Archaeological Monitoring and Evaluation for the Harbor Deepening 69kV Utilities Relocation Area, Coronado, California (with T. Wahoff and J. Cleland). Prepared for Sempra Energy and Utilities, EDAW, Inc. San Diego (2004).

Historical Architectural Evaluation of the Sepulveda Boulevard Tunnel (with M. Strauss). Prepared for the County of Los Angeles. EDAW, Inc. San Diego (2003).

Evaluation of 14 Cultural Resources at San Vicente Reservoir (with L. Willey and J. Underwood). Prepared for San Diego County Water Authority, EDAW, Inc. San Diego (2002).

Cultural and Historical Research and Technical Report for the Proposed Caltrans District 11 New Headquarters, San Diego, California. Prepared for GSA. EDAW, Inc. (2001).

Linda Kry
Staff Archaeologist

Education
B.A. Anthropology, University of California Los Angeles
A.A. Anthropology, Cerritos College, Norwalk, California

Publications + Technical Papers + Presentations
Ehringer, C., L. Kry, S. Dietler, and M. Strauss. 2008. After the Bones Are Gone: The Role Of Personal Effects in Identifying Unmarked Historic Burials. Poster presentation at the Society for Historical Archaeology Annual Meeting, Albuquerque, NM.

Linda Kry is an archaeologist with six years of experience in cultural resources management within Los Angeles County, Imperial County, Riverside County and the Mojave Desert. Linda has developed considerable expertise with all aspects of cultural resources investigations including managing field surveys and lab analysis. She assists in the management of cultural resources specialists who conduct various types of cultural resources compliance including phase I surveys, construction monitoring, Native American consultation, archaeological testing and treatment and prehistoric and historic resource significance evaluations.

In her current role, Linda has gained extensive experience with identification and classification of all types of historic materials including ceramics, glass bottles, metal cans, garment-related items, and coffin hardware, as well as processing artifact collections, including assessing conservation requirements and artifact reconstruction. Her work in various desert and coastal projects has broadened her experience to include the identification and recordation of prehistoric resources. In addition, Linda is proficient in historic and prehistoric record searches, general historic literature research, museum and archival research, Sanborn map research, Native American consultation, and the preparation of all related cultural resources documentation. Linda authors and co-authors technical reports and is familiar with requirements for CEQA and Section 106 compliance. Her present research interests include the historical development of Los Angeles and 19th to mid-20th century consumer practices.

Project Experience

Temple Street Widening, Los Angeles, CA
Served as an archaeological monitor during road construction and utilities relocation in downtown Los Angeles. Duties included documenting historic archaeological features, coordinating work schedules with on-site construction personnel, and maintaining detailed daily reports. Responsible for processing and sorting artifact collection.

Main Street Parking Facility and Motor Transport Division, Los Angeles, CA
Archaeological and paleontological monitor of construction site in downtown Los Angeles. Responsible for identification, recovery, and mapping of historic archaeological features, maintaining detailed daily reports, and coordinating work schedules with on-site construction foreman. Over 19 historic archaeological features dating from the 1860s to the 1920s were recovered on-site. Processed and sorted artifact collection.

Central Los Angeles High School #9, Los Angeles, CA
Duties included assessing artifact conditions and conservation needs, assisting with development and implementation of artifact cleaning procedures, assisting with artifact classification and cataloging using Excel, and reconstruction of artifacts. Over 3,000 historic-era artifacts were recovered from a 19th-century cemetery.

Alameda Street, Los Angeles, CA
Archaeological monitoring of street construction at Alameda Street in downtown Los Angeles resulted in the identification and recovery of over 300 historic-era artifacts. In addition, segments of both narrow-gauge and standard gauge rail lines, sections of brick foundations, and brick irrigation features were documented. A large section of late 19th to early 20th century brick pavement and part of the Zanja were also uncovered and documented during construction.

Lakeside Recreational Complex, Sylmar, CA
Led archaeological survey and authored report on a Phase I cultural resources evaluation of the historic-era Lakeside Debris Basin property. Tasks include a California Register eligibility assessment for the facility itself and archaeological features identified as a result of the survey, and prepared a Cultural Resources Technical Report with findings and recommendations for further work, pursuant to CEQA requirements.

First Street Trunk Line, Los Angeles CA
Conducted archaeological monitoring of utilities installation, responded to monitoring discoveries including historic-period utility pipes, and determined appropriate mitigation in the form of recordation. An archaeological monitoring report will be prepared at the conclusion of the project.

Van Norman Chloramination Station, San Fernando CA
Conducted archaeological monitoring with a Native American monitor during project construction. Co-author of archaeological monitoring report that will be prepared at the conclusion of the project.

Fire Station No. 48, Seal Beach, CA
Authored a report in connection with archaeological and Native American monitoring during project construction in support of cultural resources assessment pursuant to CEQA requirements.

Topanga Library Project, Topanga Canyon, CA
AECOM conducted archaeological monitoring during construction of the Topanga Library. Construction included the installation waterlines along the roadway outside of the main project area. Monitoring resulted in the discovery of materials associated with the recorded archaeological site CA-LAN-8. Served as crew chief during archaeological testing of this site. Resources were identified and evaluated for eligibility to the National Register of Historic Places.

Solar Millennium Blythe Project, Blythe, CA
Served as Crew Chief for an archaeological survey of a proposed solar electric generating facility in the Chuckwalla Valley. The project included an archaeological survey of the project site and buffer zones, the recordation of historic and prehistoric archaeological sites, and recordation of field data on Department of Parks and Recreation Forms.

Solar Millennium Palen Project, Chuckwalla Valley, CA
Served as Co-Crew Chief for an archaeological survey of a proposed solar electric generating facility in the Chuckwalla Valley. The project included an archaeological survey of the project site and buffer zones, the recordation of historic and prehistoric archaeological sites.

South Region Elementary School #1, Los Angeles, CA
Archaeological Monitor, Lab Technician. Conducted archaeological monitoring in south-central Los Angeles. The area had been in use since 1909 and was the home of several domestic, religious, and retail establishments. Responsible for processing and sorting artifact collection.

Exposition Corridor Light Rail Transit,
Los Angeles County, CA
Field Archaeologist. Photo-documented potentially historic buildings along several proposed routes for the new Exposition Light Rail in West Los Angeles, Santa Monica, and Culver City.

Woodland Duck Farm Project, El Monte, CA
Field Archaeologist. Assisted with the Phase I investigation, including a historic structure and archaeological survey of the site of the former historic Woodland Duck Farm.

Lang Ranch, Thousand Oaks, CA

Field Archaeologist. Participated in the archaeological testing of the 46-acre project area. Project work involved the archaeological testing at two artifact isolate locations to determine presence of sub-surface deposits.

Santa Anita Reservoir, Los Angeles County, CA
Field Archaeologist. Assisted with the Phase I archaeological survey of the site of the Santa Anita Dam, Reservoir and Complex.

McCoy Solar, Blythe, CA
Field Archaeologist. Assisted in an archaeological survey of a proposed solar electric generating facility in the Chuckwalla Valley. The project included an archaeological survey of the project site and buffer zones, the recordation of historic and prehistoric archaeological sites, and recordation of field data on Department of Parks and Recreation Forms.

California High Speed Train Project, Fresno, Madera, and Merced Counties, CA
Field Archaeologist. Assisted in archaeological survey of parcels for a proposed high speed train in Central California. The project included an archaeological survey of the project areas of potential effect and buffer zones, the recordation of historic and prehistoric archaeological resources, and recordation of field data on Department of Parks and Recreation Forms.

Mojave Solar One Project, San Bernardino County, CA
Field Archaeologist. Assisted in an archaeological survey. The project included an archaeological survey of the project areas of potential effect and buffer zones, the recordation of historic and prehistoric archaeological resources, and recordation of field data on Department of Parks and Recreation Forms.

Hansen Dam Project, Los Angeles, CA
Conducted a Phase 1 investigation comprised of an archaeological survey of the Project site, recordation of historic and prehistoric cultural resources, including features and identification of previously recorded sites. Authored an assessment report.

Dixieland TO IV 230 KV T-Line Project, Imperial County, CA
Field Archaeologist. Assisted in the archaeological survey of an alignment for a proposed transmission line. The project included an archaeological survey of the project site, the recordation of historic and prehistoric archaeological resources, and recordation of field data on Department of Parks and Recreation Forms.

Aiso Street Project, Los Angeles, CA
Served as an archaeological monitor during construction for a parking facility in downtown Los Angeles. Duties included documenting historic archaeological features, coordinating work schedules with AECOM staff and on-site construction personnel, and maintaining detailed daily reports. Responsible for processing, sorting and cataloguing the artifact collection for curation. Also made contributions to a report documenting the Project findings and results.

Greenline Right of Way Survey, Los Angeles County, CA
Participated in archaeological field survey of the Greenline right of way from Torrance to LAX in Los Angeles. Tasks included recording of historical and archaeological resources.

Santa Anita Reservoir, Los Angeles County, CA
Assisted in a Phase I investigation, including a historic structure and archaeological survey of the site of the Santa Anita Dam, Reservoir and Complex.

ILWU Local 13 Dispatch Hall Project, Los Angeles, CA
Conducted a Phase 1 investigation comprised of an archaeological survey of the Project site and recordation of archaeological resources. Wrote up the survey results, the Sacred Lands File search results and the Native American Contact program results for the Project cultural technical memo as part of a Draft Initial Study/Mitigated Negative Declaration Report.

Alcazar Yard, Los Angeles, CA
Conducted research for historic building evaluation through the review of building permits at various Department of Building and Safety facilities in Los Angeles County and review of Sanborn Fire Insurance Maps.

St. Jude Hospital, Fullerton, CA
Conducted a survey of the project area and authored survey results.

OCTA I-5 Highway Improvements EIR, Orange County, CA
Conducted Native American contact program as part of CEQA.

New Long Beach Courthouse Project, Long Beach, CA
Served as archaeological and paleontological monitor during construction for a new courthouse in the City of Long Beach. Duties included providing worker's training regarding archaeological and paleontological resources for on-site personnel, documenting historic archaeological features and coordinating with clients and AECOM staff. Participated in the testing excavations of early twentieth century privies that were discovered during monitoring. Served as Lab Director and was responsible for directing the processing, sorting and cataloguing of the artifact collection for curation. Co-authored a report documenting the Project findings and results.

Genesis Solar, Blythe, CA

Archaeological monitoring for the Genesis solar farm project. Monitored placement of transmission lines, large scale excavation for the placement of solar panels, and caisson drilling for solar panel footings. Aspects of the project included monitoring, survey, testing, and artifact collection. Responsibilities included field lead monitor, recordation and collection of cultural resources discovered during monitoring, survey and scheduling with archaeological, Native American and construction crews.

San Fernando Valley WRP, Los Angeles County, CA
Assisted in a Phase I portion of the project. Tasks included a records search and field survey for potential archaeological resources. Project is on-going.

Civic Center Joint Use Project, Santa Monica, CA
Management of a Phase I process. Responsibilities include: a records search, survey of project area, scheduling with AECOM staff, and co-authoring the results. Project is on-going.

Selected Reports

Central Los Angeles High School #9 Archaeological Excavation Report (in progress). Prepared for Los Angeles Unified School District. AECOM. (anticipated 2011).

Hansen Dam Golf Course Water Recycling Project
Phase I Archaeology Assessment
Los Angeles County, California (lead author).
Prepared for the Los Angeles Department of Water and Power.
AECOM July 2010.

Negative Archaeological Monitoring Report for the Fire Station 48 Replacement Project
City of Seal Beach, California (lead author).
Prepared for the City of Seal Beach. AECOM August 2010.

Draft Archaeological Assessment for the Temple Street Widening Project
City of Los Angeles, California (contributing author).
Prepared for Los Angeles Department of Public Works-Engineering.
AECOM December 2009.

Phase I Cultural Resources Assessment for the Topanga Underground Utility District Project
City of Topanga, California (contributing author).
Prepared for the Los Angeles County Department of Public Works.
AECOM April 2011.

APPENDIX B

NATIVE AMERICAN CONTACT PROGRAM

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

September 10, 2013

NATIVE AMERICAN HERITAGE COMMISSION
915 Capitol Mall, Room 364
Sacramento, California 95814
T 916.653.6251 F 916.657.5390
www.nahc.ca.gov
ds_nahc@pacbell.net

Subject: Reseda Boulevard Pipeline Project Mitigated Negative Declaration - Sacred Lands File Search

Dear Mr. Singleton:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to request that the Native American Heritage Commission conduct a Sacred Lands File search for the Reseda Boulevard Pipeline Project Mitigated Negative Declaration. The proposed project is located within Sections 26 and 35 of Township 2 North, Range 16 West of the Canoga Park 1967 United States Geological Survey (USGS) 7.5-minute quadrangle map, and is indicated on the enclosed map (Enclosure 1).

As part of LADWP's seismic safety program, the Reseda Boulevard Pipeline Project proposes to replace approximately 6,600 linear feet of 8-inch and 12-inch potable water main distribution pipeline with an earthquake resistant joint ductile iron pipe. The project would replace the potable water distribution main in portions of Reseda Boulevard, Etiwanda Avenue, Cantara Street, and Strathern Street in the San Fernando Valley that are currently slated for replacement. Once in service, the old water distributions mains would be abandoned in place. The water main distribution pipelines would be constructed in consecutive segments entirely within the public right-of-way.

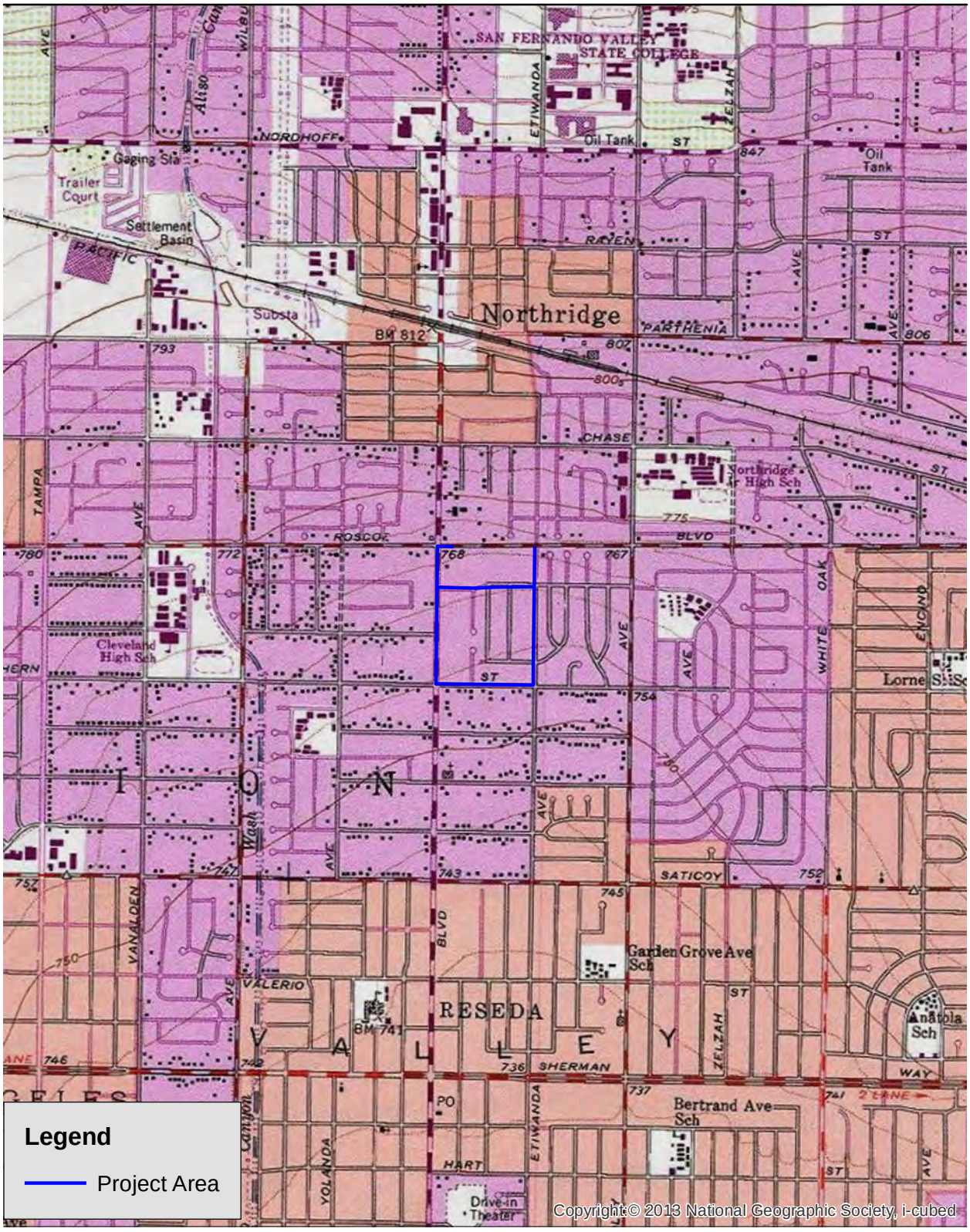
The goal of this letter, in addition to acquainting you with this project, is to request that you check the Sacred Lands File records to identify any previously recorded sites in the project area.

Thank you for your assistance. Please feel free to contact me if you have any questions about this project.

Very truly yours,

Linda Kry
AECOM
Archaeologist
D 213.593.8474 F 213.593.7715
515 S Flower Street, 8th Floor
Los Angeles, CA 90071 USA
linda.kry@aecom.com

Enclosure:
1) Project Area Map



Source: Canoga Park USGS 7.5" Quadrangle

2,000 1,000 0 2,000 Feet

Scale: 1:24,000; 1 inch = 2,000 feet

LADWP Reseda Pipeline Project
Project Area Map

Path: P:\2013\60305674_LADWP_Reseda\900-CAD-GIS\920 GIS-Graphics\922_Maps\20130909_NAHC_Map.mxd, 9/10/2013, harrist

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

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Boulevard, Suite 100
West Sacramento, CA 95691
(916) 373-3715
Fax (916) 373-5471
www.nahc.ca.gov
e-mail: ds_nahc@pacbell.net

September 12, 2013

Ms. Linda Kry, Archaeologist
AECOM
515 South Flower Street, 8th Floor
Los Angeles, CA 90071

Sent by FAX to: 213-593-7715
No. of Pages: 3

Re: Request for Sacred Lands File Search and Native American Contacts list for the "**Reseda Boulevard Pipeline Project, Mitigated Negative Declaration** located in the San Fernando Valley; Los Angeles County, California.

Dear Ms. Kry:

A record searches of the NAHC Sacred Lands File **failed to indicate** the presence of Native American traditional cultural place(s) in the project sites submitted, based on the USGS coordinates submitted as part of the 'Areas of Potential Effect. (APEs). Also, note that the absence of archaeological or Native American sacred places/sites does not preclude their existence. Other data sources for Native American sacred places/sites should also be contacted. A Native American tribe of individual may be the only sources of presence of traditional cultural places or sites.

In the 1985 Appellate Court decision (170 Cal App 3rd 604; *EPIC v. Johnson*), the Court held that the NAHC has jurisdiction and special expertise, as a state agency, over affected Native American resources impacted by proposed projects, including archaeological places of religious significance to Native Americans, and to Native American burial sites.

Attached is a list of Native American tribes, individuals/organization who may have knowledge of cultural resources in or near the project area. As part of the consultation process, the NAHC recommends that local governments and project developers contact the tribal governments and individuals to determine if any cultural places might be impacted by the proposed action. If a response is not received in two weeks of notification the NAHC requests that a follow telephone call be made to ensure that the project information has been received.

If you have any questions or need additional information, please contact me at (916) 373-3715.

Sincerely,

Dave Singleton
Program Analyst

Attachments

Native American Contacts
Los Angeles County
September 12, 2013

Beverly Salazar Folkes
1931 Shadybrook Drive
Thousand Oaks, CA 91362
folkes9@msn.com
805 492-7255
(805) 558-1154 - cell
folkes9@msn.com

Chumash
Tataviam
Ferrnandeño

Fernandeno Tataviam Band of Mission Indians
Larry Ortega, Chairperson
1019 - 2nd Street, Suite #1
San Fernando CA 91340
(818) 837-0794 Office

(818) 837-0796 Fax

Fernandeno
Tataviam

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

Kitanemuk & Yowlumne Tejon Indians
Delia Dominguez, Chairperson
115 Radio Street
Bakersfield , CA 93305
deedominguez@juno.com
(626) 339-6785

Yowlumne
Kitanemuk

San Fernando Band of Mission Indians
John Valenzuela, Chairperson
P.O. Box 221838
Newhall , CA 91322
tsen2u@hotmail.com
(661) 753-9833 Office
(760) 885-0955 Cell
(760) 949-1604 Fax

Fernandeño
Tataviam
Serrano
Vanyume
Kitanemuk

Randy Guzman - Folkes
6471 Cornell Circle
Moorpark , CA 93021
ndnRandy@yahoo.com
(805) 905-1675 - cell

Chumash
Fernandeño
Tataviam
Shoshone Paiute
Yaqui

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

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

his list s only applicable for contacting local Native Americans with regard to cultural resources for the proposed Reseda Boulevard Pipeline Project MND; located in the Community of Reseda; San Fernando Valley; Los Angeles County, California for which a Sacred Lands File search and Native American Contacts list were requested.

Native American Contact	Letter Sent	Date of Reply	Follow-Up Phone Call	Notes
Beverly Salazar Folkes	9/25/2013	N/A	10/08/2013; left message with husband. Spoke with Ms Salazar Folkes on 10/09	Ms Salazar Folkes states that the Reseda area "a dwelling area for Native people," and states that the "whole area encompasses a sensitive area." Ms Salazar Folkes recommends a Native monitor at least be on-call for all new excavations.
Chairperson Larry Ortega Fernandeno Tataviam Band of Mission Indians	9/25/2013	N/A	10/08/2013	Chairperson Larry Ortega confirmed receipt of the letter and stated that at this time he has no concerns, but asked that LADWP "proceed with caution."
Director Ron Andrade L.A. City/County Native American Heritage Commission	9/25/2013	N/A	10/08/2013; left answering machine message	N/A
Chairperson Delia Dominguez Kitanemuk & Yowlumne Tejon Indians	9/25/2013	N/A	10/08/2013; left voicemail message	N/A
Chairperson John Valenzuela San Fernando Band of Mission Indians	9/25/2013	N/A	10/08/2013; left voicemail message on cell phone. 10/10/2013 Mr. Valenzuela returned our phone call.	Mr. Valenzuela states that his historical area does not include the Northridge area, and he does not interfere in that geographical area. He says his historical area is the High Desert, in the area of Barstow and Hesperia. He asked we contact Mr. Larry Ortega of the Fernandeno Tataviam Band.
Randy Guzman-Folkes	9/25/2013	N/A	10/08/2013; left voicemail message on cell phone	N/A

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

September 25, 2013

Beverly Salazar-Folkes
1931 Shadybrook Drive
Thousand Oaks, CA 91362

Subject: Reseda Boulevard Pipeline Project Mitigated Negative Declaration

Dear Ms. Salazar-Folkes:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Reseda Boulevard Pipeline Project Mitigated Negative Declaration. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area.

As part of LADWP's seismic safety program, the Reseda Boulevard Pipeline Project proposes to replace approximately 6,600 linear feet of 8-inch and 12-inch potable water main distribution pipeline with an earthquake resistant joint ductile iron pipe. The project would replace the potable water distribution main in portions of Reseda Boulevard, Etiwanda Avenue, Cantara Street, and Strathern Street in the San Fernando Valley that are currently slated for replacement. Once in service, the old water distributions mains would be abandoned in place. The water main distribution pipelines would be constructed in consecutive segments entirely within the public right-of-way.

The proposed project is located within Sections 26 and 35 of Township 2 North, Range 16 West of the Canoga Park 1967 United States Geological Survey (USGS) 7.5-minute quadrangle map, and is indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. Please return the response form to the address shown below no later than October 25, 2013.

Please contact me directly with any questions.

Very truly yours,

Linda Kry
AECOM
Archaeologist
linda.kry@aecom.com
D: 213-593-8474 or 213-435-5846

Enclosure:

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

1) Project Area Map
2) Response Form
3) Self-Addressed Stamped Envelope

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

September 25, 2013

Fernandeno Tatavium Band of Mission Indians
Larry Ortega, Chairperson
1019 2nd Street, Suite #1
San Fernando, CA 91340

Subject: Reseda Boulevard Pipeline Project Mitigated Negative Declaration

Dear Mr. Ortega:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Reseda Boulevard Pipeline Project Mitigated Negative Declaration. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area.

As part of LADWP's seismic safety program, the Reseda Boulevard Pipeline Project proposes to replace approximately 6,600 linear feet of 8-inch and 12-inch potable water main distribution pipeline with an earthquake resistant joint ductile iron pipe. The project would replace the potable water distribution main in portions of Reseda Boulevard, Etiwanda Avenue, Cantara Street, and Strathern Street in the San Fernando Valley that are currently slated for replacement. Once in service, the old water distributions mains would be abandoned in place. The water main distribution pipelines would be constructed in consecutive segments entirely within the public right-of-way.

The proposed project is located within Sections 26 and 35 of Township 2 North, Range 16 West of the Canoga Park 1967 United States Geological Survey (USGS) 7.5-minute quadrangle map, and is indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. Please return the response form to the address shown below no later than October 25, 2013.

Please contact me directly with any questions.

Very truly yours,

Linda Kry
AECOM
Archaeologist
linda.kry@aecom.com
D: 213-593-8474 or 213-435-5846

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

Enclosure:

1) Project Area Map
2) Response Form
3) Self-Addressed Stamped Envelope

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

September 25, 2013

LA City/County Native American Indian Comm.
Ron Andrade, Director
3175 West 6th Street, Rm 403
Los Angeles, CA 90020

Subject: Reseda Boulevard Pipeline Project Mitigated Negative Declaration

Dear Mr. Andrade:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Reseda Boulevard Pipeline Project Mitigated Negative Declaration. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area.

As part of LADWP's seismic safety program, the Reseda Boulevard Pipeline Project proposes to replace approximately 6,600 linear feet of 8-inch and 12-inch potable water main distribution pipeline with an earthquake resistant joint ductile iron pipe. The project would replace the potable water distribution main in portions of Reseda Boulevard, Etiwanda Avenue, Cantara Street, and Strathern Street in the San Fernando Valley that are currently slated for replacement. Once in service, the old water distributions mains would be abandoned in place. The water main distribution pipelines would be constructed in consecutive segments entirely within the public right-of-way.

The proposed project is located within Sections 26 and 35 of Township 2 North, Range 16 West of the Canoga Park 1967 United States Geological Survey (USGS) 7.5-minute quadrangle map, and is indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. Please return the response form to the address shown below no later than October 25, 2013.

Please contact me directly with any questions.

Very truly yours,

Linda Kry
AECOM
Archaeologist
linda.kry@aecom.com
D: 213-593-8474 or 213-435-5846

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

Enclosure:

1) Project Area Map
2) Response Form
3) Self-Addressed Stamped Envelope

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

September 25, 2013

Kitanemuk & Yowlumne Tejon Indians
Delia Dominguez, Chairperson
115 Radio Street
Bakersfield, CA 93305

Subject: Reseda Boulevard Pipeline Project Mitigated Negative Declaration

Dear Ms. Dominquez:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Reseda Boulevard Pipeline Project Mitigated Negative Declaration. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area.

As part of LADWP's seismic safety program, the Reseda Boulevard Pipeline Project proposes to replace approximately 6,600 linear feet of 8-inch and 12-inch potable water main distribution pipeline with an earthquake resistant joint ductile iron pipe. The project would replace the potable water distribution main in portions of Reseda Boulevard, Etiwanda Avenue, Cantara Street, and Strathern Street in the San Fernando Valley that are currently slated for replacement. Once in service, the old water distributions mains would be abandoned in place. The water main distribution pipelines would be constructed in consecutive segments entirely within the public right-of-way.

The proposed project is located within Sections 26 and 35 of Township 2 North, Range 16 West of the Canoga Park 1967 United States Geological Survey (USGS) 7.5-minute quadrangle map, and is indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. Please return the response form to the address shown below no later than October 25, 2013.

Please contact me directly with any questions.

Very truly yours,

Linda Kry
AECOM
Archaeologist
linda.kry@aecom.com
D: 213-593-8474 or 213-435-5846

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

Enclosure:

1) Project Area Map
2) Response Form
3) Self-Addressed Stamped Envelope

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

September 25, 2013

San Fernando Band of Mission Indians
John Valenzuela, Chairperson
P.O. Box 221838
Newhall, CA 91322

Subject: Reseda Boulevard Pipeline Project Mitigated Negative Declaration

Dear Mr. Valenzuela:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Reseda Boulevard Pipeline Project Mitigated Negative Declaration. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area.

As part of LADWP's seismic safety program, the Reseda Boulevard Pipeline Project proposes to replace approximately 6,600 linear feet of 8-inch and 12-inch potable water main distribution pipeline with an earthquake resistant joint ductile iron pipe. The project would replace the potable water distribution main in portions of Reseda Boulevard, Etiwanda Avenue, Cantara Street, and Strathern Street in the San Fernando Valley that are currently slated for replacement. Once in service, the old water distributions mains would be abandoned in place. The water main distribution pipelines would be constructed in consecutive segments entirely within the public right-of-way.

The proposed project is located within Sections 26 and 35 of Township 2 North, Range 16 West of the Canoga Park 1967 United States Geological Survey (USGS) 7.5-minute quadrangle map, and is indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. Please return the response form to the address shown below no later than October 25, 2013.

Please contact me directly with any questions.

Very truly yours,

Linda Kry
AECOM
Archaeologist
linda.kry@aecom.com
D: 213-593-8474 or 213-435-5846

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

Enclosure:

1) Project Area Map
2) Response Form
3) Self-Addressed Stamped Envelope

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

September 25, 2013

Randy Guzman-Folkes
6471 Cornell Circle
Moorpark, CA 93021

Subject: Reseda Boulevard Pipeline Project Mitigated Negative Declaration

Dear Mr. Guzman-Folkes:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Reseda Boulevard Pipeline Project Mitigated Negative Declaration. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area.

As part of LADWP's seismic safety program, the Reseda Boulevard Pipeline Project proposes to replace approximately 6,600 linear feet of 8-inch and 12-inch potable water main distribution pipeline with an earthquake resistant joint ductile iron pipe. The project would replace the potable water distribution main in portions of Reseda Boulevard, Etiwanda Avenue, Cantara Street, and Strathern Street in the San Fernando Valley that are currently slated for replacement. Once in service, the old water distributions mains would be abandoned in place. The water main distribution pipelines would be constructed in consecutive segments entirely within the public right-of-way.

The proposed project is located within Sections 26 and 35 of Township 2 North, Range 16 West of the Canoga Park 1967 United States Geological Survey (USGS) 7.5-minute quadrangle map, and is indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. Please return the response form to the address shown below no later than October 25, 2013.

Please contact me directly with any questions.

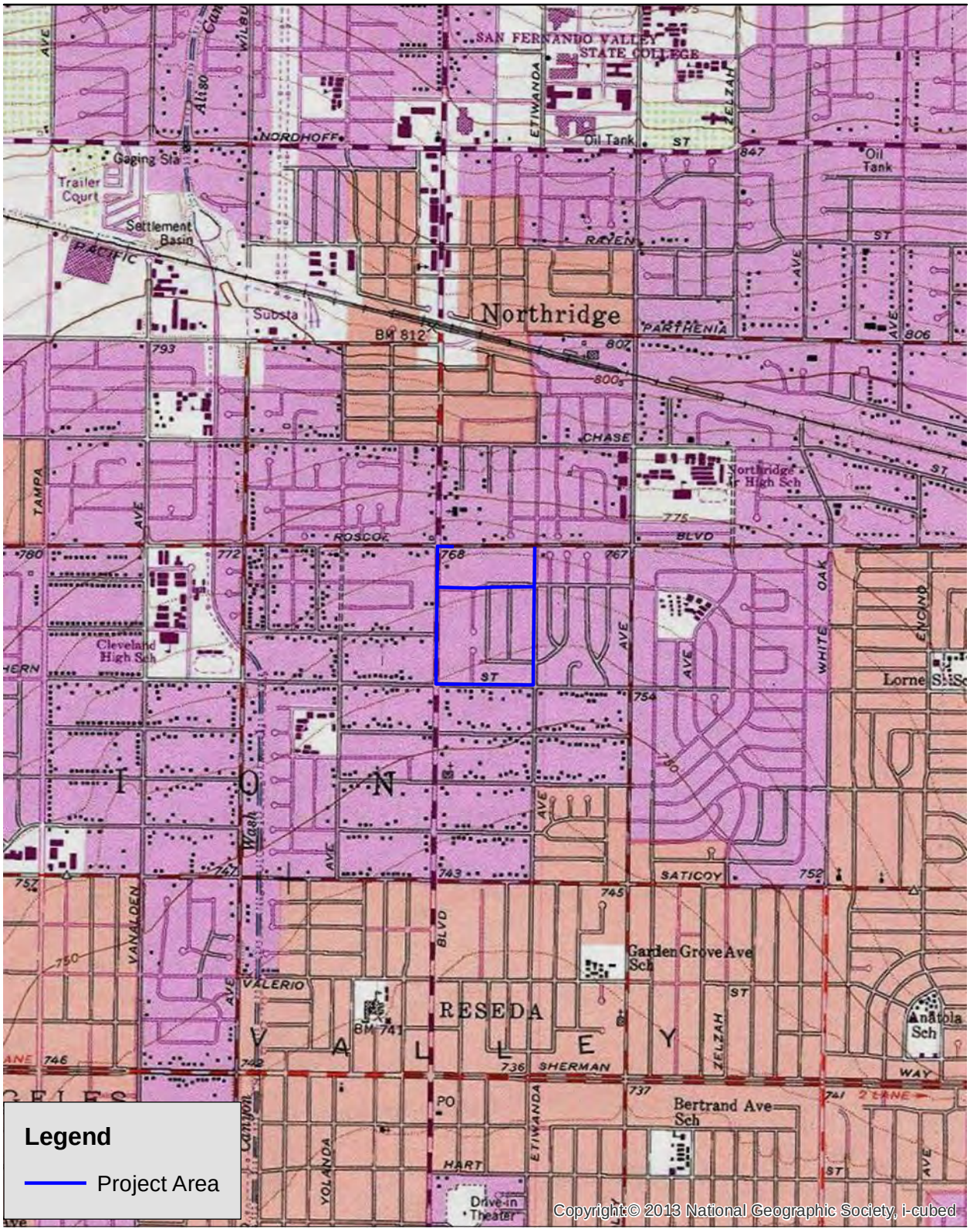
Very truly yours,

Linda Kry
AECOM
Archaeologist
linda.kry@aecom.com
D: 213-593-8474 or 213-435-5846

Enclosure:

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

1) Project Area Map
2) Response Form
3) Self-Addressed Stamped Envelope



Source: Canoga Park USGS 7.5" Quadrangle

2,000 1,000 0 2,000 Feet

Scale: 1:24,000; 1 inch = 2,000 feet

LADWP Reseda Pipeline Project
Project Area Map

Path: P:\2013\60305674_LADWP_Reseda\900-CAD-GIS\920 GIS-Graphics\922_Maps\20130909_NAHC_Map.mxd, 9/10/2013, harrist

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

_____
_____
_____
_____
_____

_____ _____
Signature Date

Please return completed form no later than October 25, 2013 to:

Linda Kry
AECOM
515 S Flower Street
8th Floor
Los Angeles, CA 90071

Appendix D
Traffic Study

Traffic Study for the
City of Los Angeles Department of Water and Power
Reseda Pipeline Pilot Project

Los Angeles, California

October 4, 2013
DRAFT

Prepared for:

AECOM
515 S. Flower Street, 9th Floor
Los Angeles, California 90071
(213) 593-7700

Prepared by:

KOA CORPORATION
PLANNING & ENGINEERING

1100 Corporate Center Drive, Suite 201
Monterey Park, California 91754
(323) 260-4703

JB31094

Table of Contents

List of Figures

List of Tables

Appendices

1. Introduction

This report documents the traffic analysis prepared by KOA Corporation to assess the traffic impact of the proposed Reseda Boulevard Pipeline Project (proposed Project), located in the San Fernando Valley area of the City of Los Angeles. The City of Los Angeles Department of Water and Power (LADWP) is proposing to replace an existing public water distribution main with earthquake resistant ductile iron pipe. The proposed project is part of an LADWP long-term seismic improvement program for the water system.

This traffic study assesses the potential traffic impact of the construction of the proposed Project. Post-project, or operational, traffic impacts will be less than significant as the pipeline will not require active management to operate. Routine project maintenance in the operations period will not create a significant level of regularly-generated trips.

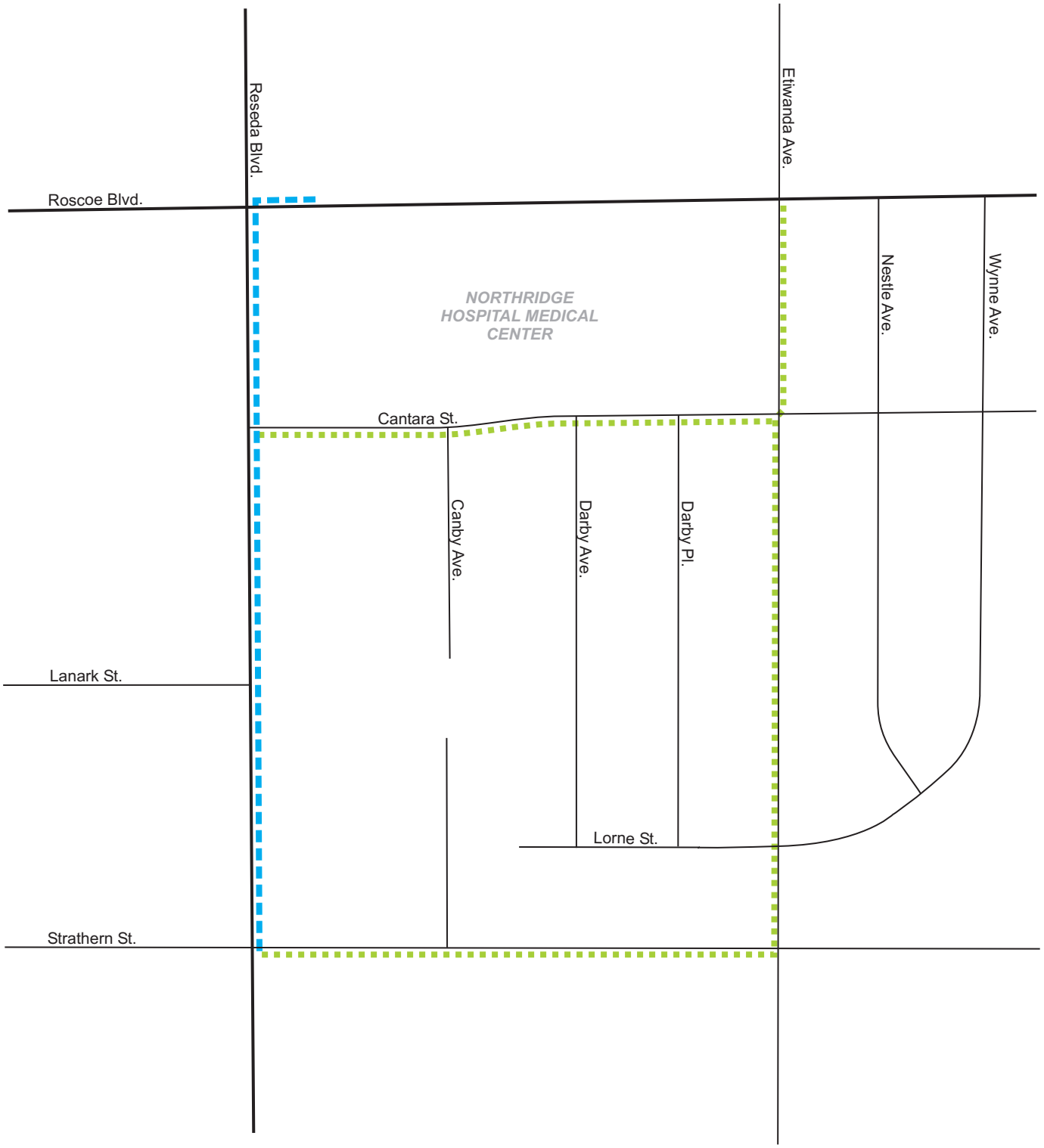
1.1 Project Location

The proposed project would be located in consecutive segments entirely within the public roadway right-of-way in the Reseda community of the City of Los Angeles. The Project includes the following public water distribution main replacements:

- Approximately 166 feet of 12-inch pipe on the south side of Roscoe Boulevard from Reseda Boulevard to east of Reseda Boulevard;
- Approximately 1,822 feet of 12-inch pipe on the east side of Reseda Boulevard from Roscoe Boulevard to Strathern Street;
- Approximately 1,335 feet of 8-inch pipe on south side of Cantara Street from Reseda Boulevard to Etiwanda Avenue;
- Approximately 1,872 feet of 8-inch pipe on the east side of Etiwanda Avenue from Roscoe Boulevard to Cantara Street and on the west side of Etiwanda Avenue from Cantara Street to Strathern Street; and
- Approximately 1,278 feet of 8-inch pipe on the south side of Strathern Street from Reseda Boulevard to Etiwanda Avenue

Figure 1 illustrates the extents of the Project corridor.

The proposed project would be located within a highly urbanized area in the City of Los Angeles. Land uses in the vicinity of the proposed project corridor are predominantly residential (single- and multi-family) and commercial.



LEGEND

- Project Site Location
- 12 inch ERDIP pipeline
- 8 inch ERDIP pipeline

8/28/13

N

Not to Scale

KOA CORPORATION
PLANNING & ENGINEERING

Reseda Pipeline Project

Figure 1

Project Construction Segments

1.2 Project Description

The proposed project would replace an existing older pipeline to implement a long-term seismic improvement program. This is a demonstration project and would be the second application of earthquake resistant joint ductile iron pipe (ERDIP) in the City of Los Angeles. This project was selected because it reinforces the water distribution network around Northridge Hospital Medical Center.

Installation of the ERDIP would occur within public roadways using a cut and cover trenching technique. An approximately 2.5-foot wide by 5-foot deep trench in proximity to the existing water distribution mains would be excavated within the roadway that could be covered with metal plates during periods of the day when construction is not active.

Once the pipeline has been installed within a segment, the trench would be backfilled with imported slurry and returned to its original condition. Pipeline installation would necessitate restrictions of on-street parking and closure of up to two lanes of the roadway, depending on the location of construction. In general, approximately 25 linear feet of pipeline would be installed per day.

Construction staging would occur at the LADWP yard near Devonshire Street and Balboa Boulevard.

Once in service, the old water distribution mains would be abandoned in place. No permanent above-ground structures would be constructed, and there would be no active operational activities beyond maintenance.

1.3 Traffic Analysis Methodology

The focus of this traffic impact study is on the construction period of the proposed Project. The post-construction operations period will not generate significant levels of daily traffic, and only routine maintenance activities will be required. Selected intersections and roadway segments were analyzed along the construction route.

Roadway intersections were examined for approach lane reductions and removals due to establishment of construction-related work areas and necessary diversions during trenching activities adjacent to or within the intersection. Roadway segments were examined for similar travel lane reductions.

The steps involved in the analysis included internal scoping of the work with the project team; collection of baseline traffic data; analysis of existing, existing-with-construction, and future with-construction conditions; identification of significant impacts and other circulation issues; and development of recommendations for mitigation. Further details of the methodology applied to this effort are summarized below.

Study Area and Orientation

Major signalized intersections along the project route were identified that would be affected by the establishment of construction work zones.

Data Collection
Peak-period (7:00 a.m. to 10:00 a.m. and 3:00 p.m. to 6:00 p.m.) weekday traffic turn movement counts were conducted at five signalized study intersections. In addition, daily volume counts were conducted at seven study area roadway segments. Existing intersection traffic volumes were collected on Wednesday, August 28, 2013.

Definition of Analysis Periods
The study analysis periods were based on existing conditions (the time when the traffic counts were conducted), and the assumed peak-year of construction of the proposed Project (defining the future analysis year). The future analysis period was defined as the year 2015, the latest year of the project construction period.

1.4 Level of Service Definition

The concept of level of service (LOS) for roadway segments is typically defined in terms of average travel speed of all vehicles on the facility. Average travel speed is strongly influenced by the density of signalized intersections per mile, average intersection delay, the number of driveways per segment and the presence of on-street parking.

Table 1 provides descriptions of general roadway operations for each LOS value, as defined within the 2000 *Highway Capacity Manual* (published by the Transportation Research Board).

All signalized intersection volume-to-capacity (V/C) calculations, which define the LOS values, were adjusted downward based on the presence within the corridor of the ATSAC/ATCS signal synchronization and adaptive control system of the City of Los Angeles. The Department of Transportation (LADOT) allows for a factor to be applied that acknowledges the traffic flow benefits of the system. The table data incorporates this factor, and the appendix worksheets provide the non-factored calculations.

Table 1 – Level of Service Definitions

LOS	Definition	Signalized Intersection Volume/Capacity Ratio (CMA)	Stop-Controlled Intersection Average Stop Delay Per Vehicle (Sec/Veh) (HCM)
A	Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.	0.000 - 0.600	≤10
B	Very good operation. Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow. An approach to an intersection may occasionally be fully utilized and traffic queues start to form.	0.601 - 0.700	>10 - 15
C	Good operation. Occasionally backups may develop behind turning vehicles. Most drivers feel somewhat restricted.	0.701 - 0.800	>15 - 25
D	Fair operation. There are no long-standing traffic queues. This level is typically associated with design practice for peak periods.	0.801 - 0.900	>25 - 35
E	Poor operation. Some long standing vehicular queues develop on critical approaches.	0.901 - 1.000	>35 - 50
F	Forced flow. Represents jammed conditions. Backups from locations downstream or on the cross street may restrict or prevent movements of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop and go type traffic flow.	Greater than 1.000	>50
Source:	Highway Capacity Manual, Special Report 209, Transportation Research Board, Washington D.C., 2000 and Interim Materials on Highway Capacity, NCHRP Circular 212, 1982		

Section 3 of this report provides a review of existing LOS values at the study intersections and roadway segments. Section 4 provides a review of pre-Project (pre-construction and pre-operations) conditions. Construction period conditions are reviewed within Section 5 (trip generation) and 6 (impacts).

2. Project Construction Summary

This section of the report identifies the construction activity that would occur with the proposed Project pipeline route.

Due to the extensive surface work that is required, excavations and open trenching methods will have the greatest Project traffic circulation impacts. Temporary lane closures along the proposed Project alignment would be required. Two-way travel along the affected roadways would be maintained, although the roadway would be restricted in capacity while work area boundaries are maintained.

Project construction activities will be accomplished in the following steps:

Step 1 – Survey and Trench Marking – The initial step will consist of surveying and marking the center line of the trench and surveying and marking underground substructures that will need to be potholed.

Step 2 – Sawcutting, Breaking and Removal of Pavement – Following the marking of the center line of the trench, concrete type pavement will be sawcut and then broken while asphalt pavement will be broken. The pavement will then be hauled away for disposal.

Step 3 – Excavations, Trenching, Pipeline Installation, and Backfilling – Each construction crew is estimated by LADWP to be capable of trenching approximately 25 linear feet per day. The trenching area and adjacent staging and work areas would be approximately 2.5-foot wide by 5-feet deep. Areas that are trenched or excavated would be covered with steel plates every evening until the road surface is restored. This would allow for continued usage of the affected roadway. When segments of the trench line are restored, more trenching would occur further down the corridor.

This report analyzes the effects of typical construction work areas, including work areas for Steps 2, (Sawcutting, Breaking and Removal of Pavement), 3 (Excavations, Trenching, Pipeline installation, backfilling), and the physical effect of the establishment of these areas on typical roadway cross-sections. The worst-case physical extents of related roadway capacity constrictions at each study intersection and within each study segment have been considered.

2.1 Project Construction Details

Most of the construction activities for the Project will occur within public rights-of-way on city streets pursuant to LADWP existing franchise agreements.

Temporary lane closures along streets as required for construction would be coordinated with the other City of Los Angeles entities such as the Bureau of Engineering (LABOE) and the Department of Transportation (LADOT). LADWP is a member of the California Joint Utility Traffic Control Committee, which in 1996 published the *Work Area Protection and Traffic Control Manual.* The traffic control plans and associated text depicted in this manual conform to the guidelines established by the Federal and State Departments of Transportation.

LADWP would follow the recommendations in the Manual regarding basic standards for the safe movement of traffic upon highways and streets in accordance with Section 21400 of the California Vehicle Code. These recommendations include provisions for safe access of police, fire, and other rescue vehicles. In addition, LADWP would obtain roadway encroachment permits and would submit traffic management plans to LABOE and LADOT for review and approval.

Throughout the construction of the trench, asphalt, concrete, and excavated material would be hauled off by truck for disposal at a designated disposal site. This disposal site location is east of the study area.

In roadways, trucks would be used to haul material, typically as it is excavated from the trenches. As trucks are filled with spoils, they would leave the work areas and be replaced by empty trucks. Delivery trucks carrying materials and pipeline elements would arrive as-needed during construction, with a low average number of truck trips generated on an average day. As part of the final construction activities, roadway pavement would be restored. Project construction period trip generation is discussed more in Section 5 of this report.

Lane closure for construction activities will be shown on the traffic control plans, to be submitted to LADOT on each construction segment.

2.2 Project Schedule

Construction of the proposed project is anticipated to begin in summer 2014 and take approximately one year to complete, concluding in mid-2015. Project trenching activity, however, would only occur within short segments of the roadway at a time, and progress along the corridor to complete the construction effort.

Typical construction hours would be Monday through Friday from 7:00 a.m. to 3:30 p.m. The City of Los Angeles Rush Hour Ordinance limits in-street construction on weekdays to the hours of 9:00 a.m. through 3:30 p.m. However, a variance to the Mayor's Executive Order No. 2 to allow construction outside those times would be requested.

3. Existing Area Traffic Conditions

This report section describes the characteristics of roadways within the study area. A review of the collected traffic volumes is provided, along with a level of service analysis for these facilities.

3.1 Study Intersections and Roadway Segments

For the traffic impact analysis, five locations were defined as study intersections. Existing intersection traffic volumes were collected on Tuesday, April 09, 2013. The following are the five signalized study intersections:

1. Reseda Boulevard/Roscoe Boulevard
2. Reseda Boulevard/Cantara Street
3. Reseda Boulevard/Strathern Street
4. Etiwanda Avenue/Roscoe Boulevard
5. Etiwanda Avenue/Strathern Street

In addition, the following seven roadway segments were included in the study area:

A. Roscoe Boulevard, between Reseda Boulevard and Etiwanda Avenue
B. Reseda Boulevard, between Roscoe Boulevard and Cantara Street
C. Reseda Boulevard, between Cantara Street and Strathern Street
D. Cantara Street, between Reseda Boulevard and Etiwanda Avenue
E. Etiwanda Avenue, between Roscoe Boulevard and Cantara Street
F. Etiwanda Avenue, between Cantara Street and Strathern Avenue
G. Strathern Street, between Reseda Boulevard and Etiwanda Avenue

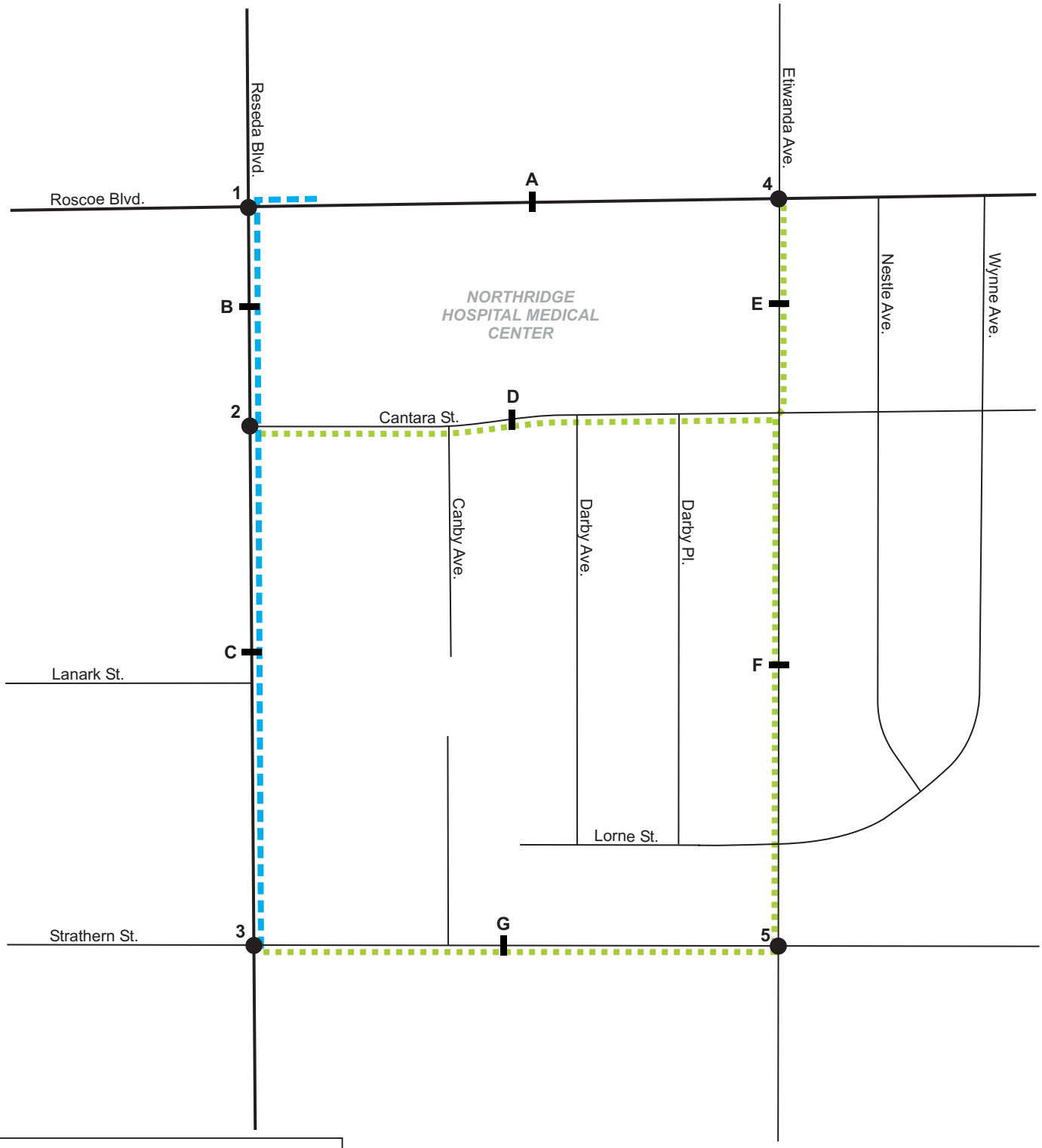
The associated daily roadway counts were also collected during the same day as the intersection counts.

Figure 2 illustrates the locations of the study intersections and roadway segments. Figure 3 illustrates the study intersection approach lanes and control configurations. The traffic count summaries are provided within Appendix A of this report.

3.2 Local Roadway Characteristics

The proposed Project alignment along Whitsett Avenue has two travel lanes in each direction. On-street parking is generally permitted along most of the alignment, but prohibited within the northern and southern ends of the alignment. Parking regulation tend to be more restrictive near commercial areas.

Table 2 summarizes the characteristics of the study segments by number of lanes, median type, parking restrictions, adjacent land uses, speed limits, and curb-to-curb physical width.

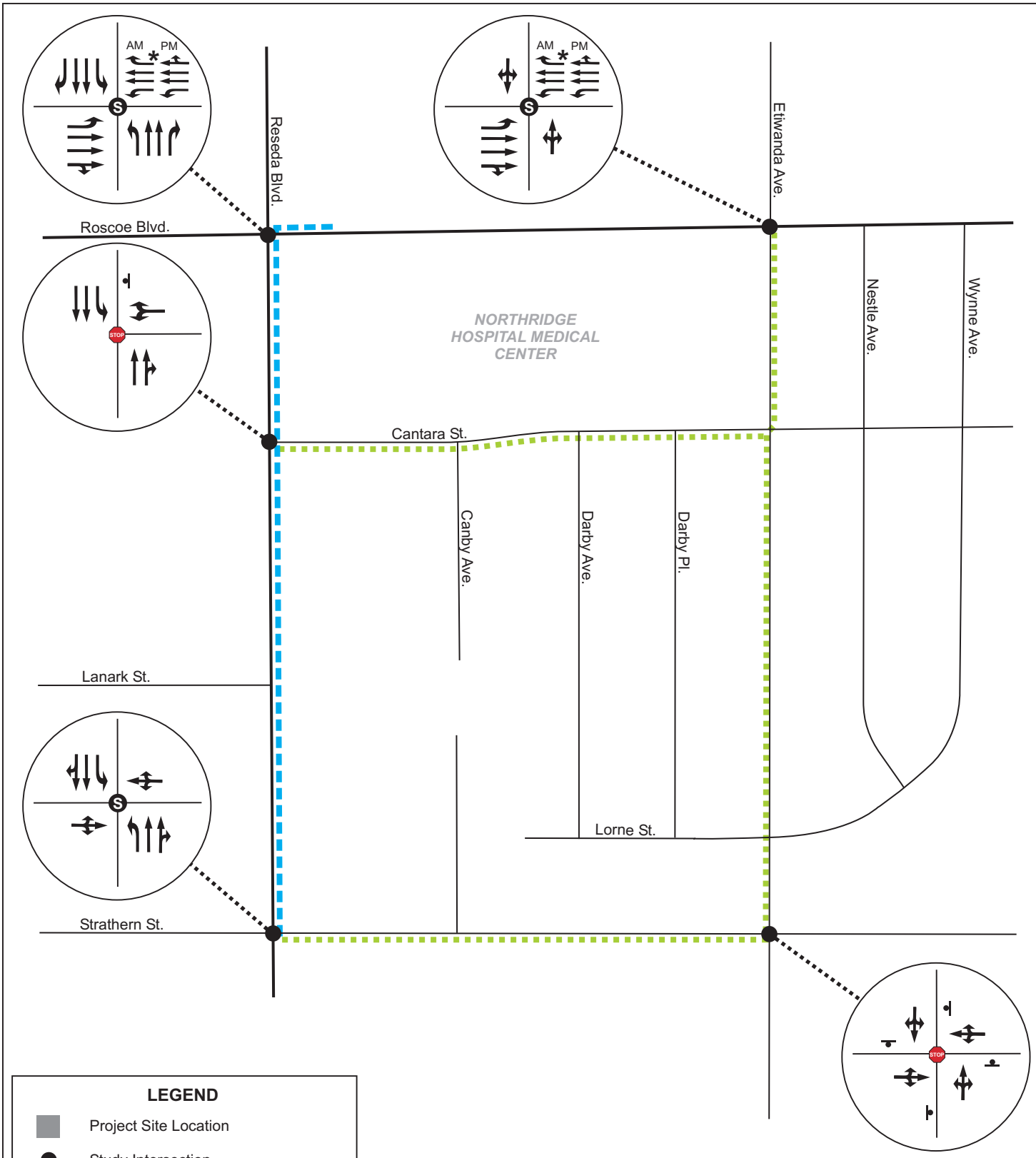


KOA CORPORATION
PLANNING & ENGINEERING

Reseda Pipeline Project

Figure 2

Study Intersections and Roadway Segments



KOA CORPORATION
PLANNING & ENGINEERING

Reseda Pipeline Project

Figure 3

Intersection Lane Configurations

Table 2 – Project Corridor Roadway Characteristics

Study Seg #	From	To	Funtional Classification	Lane		Median Type	Parking Restrictions		Land Use	Speed Limit
				NB/EB	SB/WB		NB / EB	SB / WB		
ROSCOE BOULEVARD										
1	Reseda Blvd.	Etiwanda Ave.	Major Hwy Class II	3	3 / 2	2LT	NSAT	NS 4-7PM	Residential/ Medical	40
RESEDA BOULEVARD										
2	Roscoe Blvd	Cantara St	Major Hwy Class II	2	2	DY	NSAT	PA	Residential/ Commercial	35
3	Cantara St	Strathern St	Major Hwy Class II	2	2	2LT	PA	PA	Residential	35
ETIWANDA AVENUE										
4	Roscoe Blvd	Cantara St	Collector	1	1	ST	No Parking 8AM-6PM Vehicles with District No.3 Permits Exempted	NPAT	Residential/ Medical	25
5	Cantara St	Strathern St	Collector	1	1	ST	PA	PA	Residential	25
CANTARA STREET										
6	Reseda Blvd.	Etiwanda Ave.	Local	1	1	NS	PA	PA	Residential/ Medical	25
STRATHERN STREET										
7	Reseda Blvd.	Etiwanda Ave.	Collector	1	1	ST	PA	PA	Residential	25

DY - Doublle Yellow 2LT - Dual Left Turn ST- Striped NS - Not Striped
PA - Parking Anytime NSAT - No Stopping Anytime NS 4-7pm - No Stopping NPAT - No Parking Anytime

3.3 Existing Area Transit Service

The project study area is served by public transit bus lines operated by the County of Los Angeles Metropolitan Transportation Authority (Metro) and LADOT. Table 3 provides a description of the transit lines that serve the study area.

Table 3 – Transit Service Summary

Agency	Line	From	To	Via	Approx. Peak Frequency
Metro	152	North Hollywood	Woodland Hills	Roscoe Boulevard	8 to 20 minutes
Metro	353	North Hollywood	Woodland Hills	Roscoe Boulevard	20 to 25 minutes
Metro	240	Canoga Park	Studio City	Reseda Boulevard	20 to 30 minutes
Metro Rapid	741	Tarzana	Northridge	Reseda Boulevard	15 to 20 minutes
LADOT DASH	Northridge	Northridge	Reseda	Burbank Boulevard	15 minutes

3.4 Existing Traffic Signal System

The City of Los Angeles Automated Traffic Surveillance And Control (ATSAC) system is a computer-based traffic signal control system whereby City engineers monitor traffic conditions and system performance, selects appropriate signal timing (control) strategies, and performs equipment diagnostics and alert functions. Sensors in the street detect the passage of vehicles, vehicle speed, and the level of congestion. This information is received on a second-by-second (real-time) basis and is analyzed on a minute-by-minute basis at the ATSAC Operations Center to determine if better traffic flow can be achieved by changing the signal timing. If required, the signal timing is either automatically changed by the ATSAC computers or manually changed by the operator using communication lines that connect the ATSAC Center with each traffic signal. To supplement the information from electronic detectors, closed-circuit television (CCTV) surveillance equipment has been and continues to be installed at critical locations throughout the City.

Adaptive Traffic Control System (ATCS) is the latest enhancement to ATSAC which provides fully traffic adaptive signal control based on real-time traffic conditions. The ATCS will automatically adjust traffic signal timing in response to current traffic demands by allowing ATCS to simultaneously control all three critical components of traffic signal timing, namely cycle length, phase split and offset.

For capacity analysis, LADOT guidelines suggest a 0.07 reduction in volume-to-capacity ratio with the implementation of ATSAC and a 0.03 reduction with the implementation of ATCS, for an overall volume-to-capacity reduction of 0.10. This reduction represents LADOT-estimated benefits in flow and capacity increase by operation of this program.

According to LADOT staff, all of the signalized study intersections are currently equipped with ATSAC/ATCS and are subject to an overall volume-to-capacity reduction of 0.1 for both existing and future conditions to reflect the ATSAC and ATCS enhancements.

3.5 Existing Intersection Levels of Service

This report section documents existing weekday a.m. and p.m. peak-hour traffic conditions within the study area. Based on the traffic counts conducted at the study intersections, a level of service (LOS) value and a corresponding volume-to-capacity (v/c) ratio was determined for each study intersection.

Table 4 provides the V/C and LOS values under existing (2013) conditions, for the a.m. and p.m. peak hours. Study intersections #2 and #5 are unsignalized. LOS values were determined using the HCM unsignalized analysis method, with output provided as average delay per approaching vehicle.

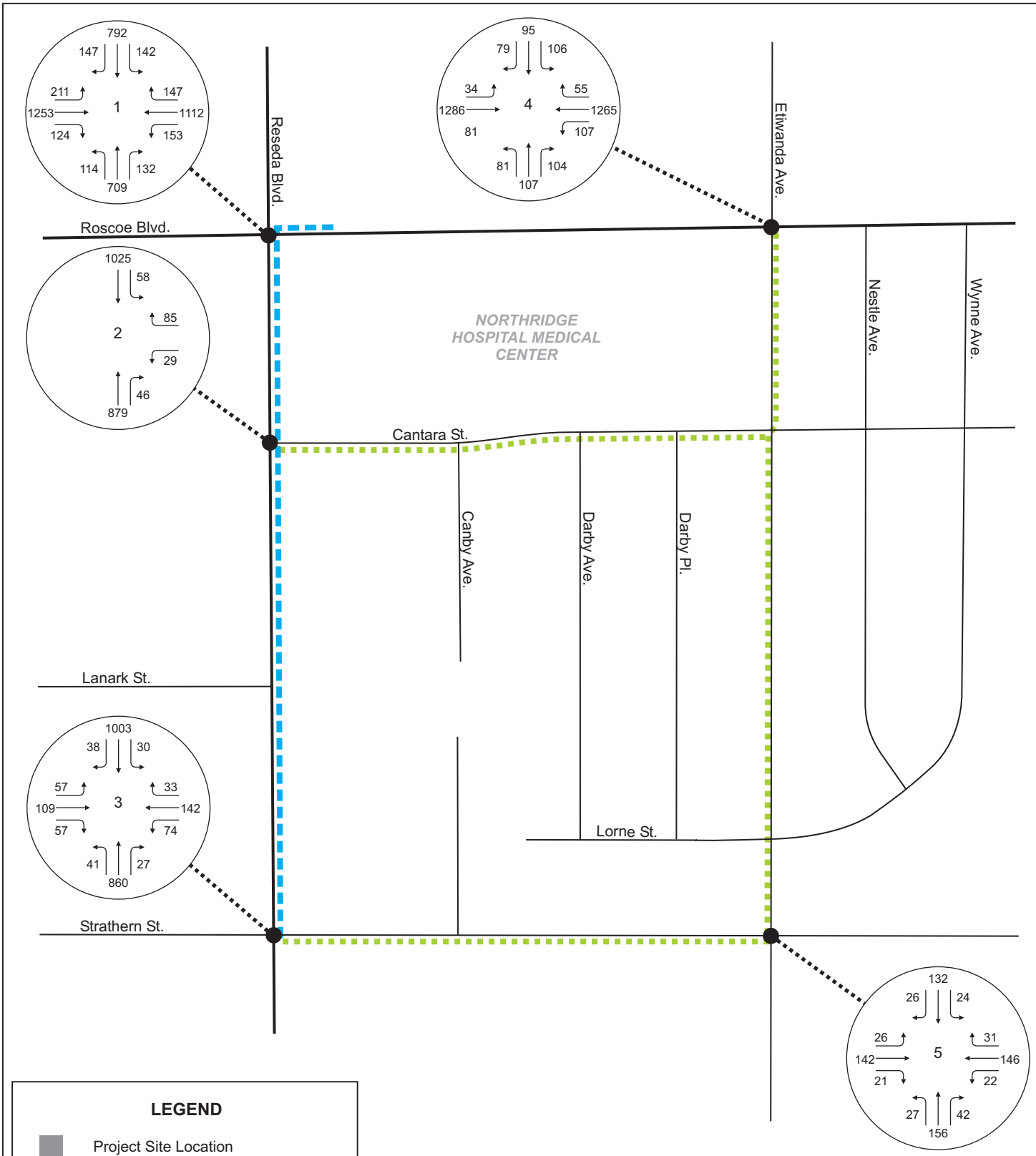
Table 4 – Intersection Level of Service Calculations – Existing (2013) Conditions

	Study Intersections	Existing (2013) Conditions			
		AM Peak Hour		PM Peak Hour	
		V/C or Delay	LOS	V/C or Delay	LOS
1	Reseda Boulevard & Roscoe Boulevard	0.829	D	0.796	C
2	Reseda Boulevard & Cantara Street	28.9	D	32.4	D
3	Reseda Boulevard & Strathern Street	0.478	A	0.413	A
4	Etiwanda Avenue & Roscoe Boulevard	0.610	B	0.534	A
5	Etiwanda Avenue & Strathern Street	10.1	B	8.8	A

The data in Table 4 indicates that all five study intersections are currently operating at LOS D or better during the a.m. and p.m. peak hours.

The existing (2013) peak-hour turn movement volumes at the study intersections are provided on Figure 4 (a.m. peak) and Figure 5 (p.m. peak).

The intersection level of service worksheets for the existing conditions scenario are provided in Appendix B of this report.



LEGEND

- Project Site Location
- 12 inch ERDIP pipeline
- 8 inch ERDIP pipeline
- Study Intersection
- xx — Intersection Turn Volume

8/28/13

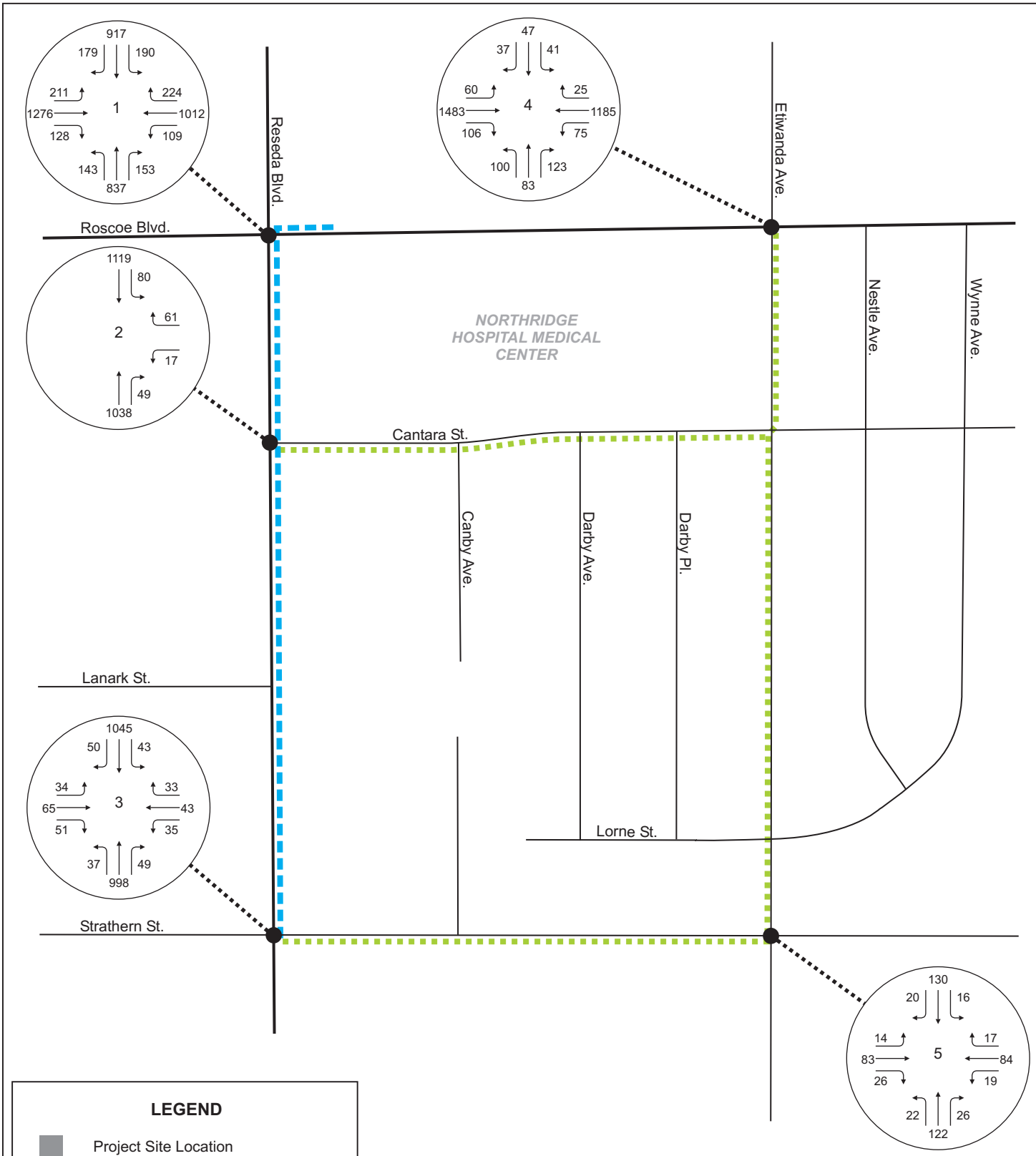
N

Not to Scale

KOA CORPORATION
PLANNING & ENGINEERING

Reseda Pipeline Project — Figure 4

Existing (2013) AM Peak Hour Traffic Volumes



KOA CORPORATION
PLANNING & ENGINEERING

Reseda Pipeline Project — Figure 5

Existing (2013) PM Peak Hour Traffic Volumes

3.6 Existing Roadway Segment Volumes

Table 5 provides a summary of the average daily traffic (ADT) volumes at the study roadway segment locations, based on the August 2013 counts.

Table 5 – Study Roadway Segments – Existing (Year 2013)
Weekday Daily Vehicle Volumes

	Street Segments	Existing ADT
A	Roscoe Boulevard Between Reseda Boulevard and Etiwanda Avenue	37,134
B	Reseda Boulevard Between Roscoe Boulevard and Cantara Street	31,403
C	Reseda Boulevard Between Cantara Street and Strathern Street	30,281
D	Cantara Street Between Reseda Boulevard and Etiwanda Avenue	2,334
E	Etiwanda Avenue Between Roscoe Boulevard and Cantara Street	5,239
F	Etiwanda Avenue Between Cantara Street and Strathern Avenue	3,095
G	Strathern Avenue Between Reseda Boulevard and Etiwanda Avenue	2,904

The highest daily vehicle volume occurs on Roscoe Boulevard between Reseda Boulevard and Etiwanda Avenue.

The daily segment traffic count summaries are provided within Appendix A to this report.

4. Future 2015 Without-Project Conditions

This section provides an analysis of "without-Project" Conditions in the study area, with ambient growth and area project trips. Construction of the proposed Project is scheduled to begin in summer 2014 and take approximately one year to complete, ending in mid-2015. Construction would progress along the corridor over the course of the construction period.

The peak construction activity period within the overall construction timeframe was analyzed to determine potential Project construction-period impacts. The without-Project analysis was defined and analyzed through an application of an annual ambient growth rate to the existing traffic volumes, plus addition of volumes generated by area projects.

4.1 Ambient Growth

In order to forecast baseline traffic volumes for the analysis year of 2015, year-2013 peak-hour traffic count volumes from the existing conditions scenario were increased by an annual ambient growth rate of one percent. This rate was applied as a compounded factor of 1.02.

The application of this annual growth rate is consistent with sub-regional traffic growth data defined by the County of Los Angeles Congestion Management Program (CMP) document.

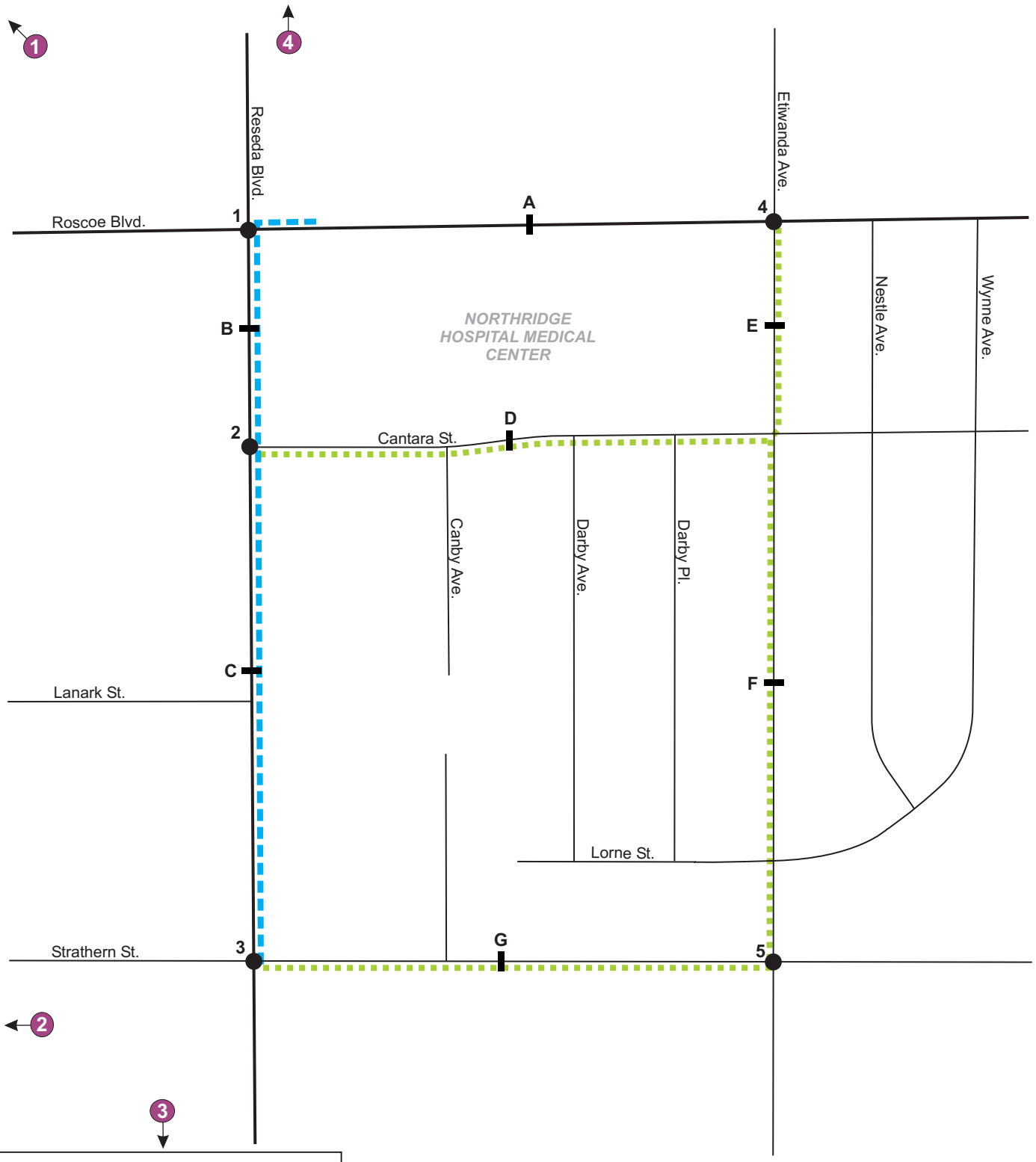
4.2 Area Projects

A 1.5-mile radius from the Project corridor was used to define a capture area for area approved and pending (cumulative) projects. The list of area projects was compiled based on information provided by LADOT Development Review staff. From this process, four projects were defined within the study area for inclusion in the analysis.

The projects included in the list would potentially contribute measurable traffic volumes to the study area during the future analysis period. The LADOT project database provides daily, a.m. peak hour, and p.m. peak hour trips, compiled from environmental documentation or traffic studies.

The area projects included in this study for future period analysis, and the trip generation of each, are provided in Appendix C.

Figure 6 illustrates the locations of the included area projects.



KOA CORPORATION
PLANNING & ENGINEERING

Reseda Pipeline Project

Figure 6

Location of Area Projects

4.3 Intersection Levels of Service – 2015

To analyze future conditions in the year 2015 without the proposed Project, intersection turn volumes with ambient growth and trips generated by area projects were analyzed using the same methodology applied to the existing conditions analysis.

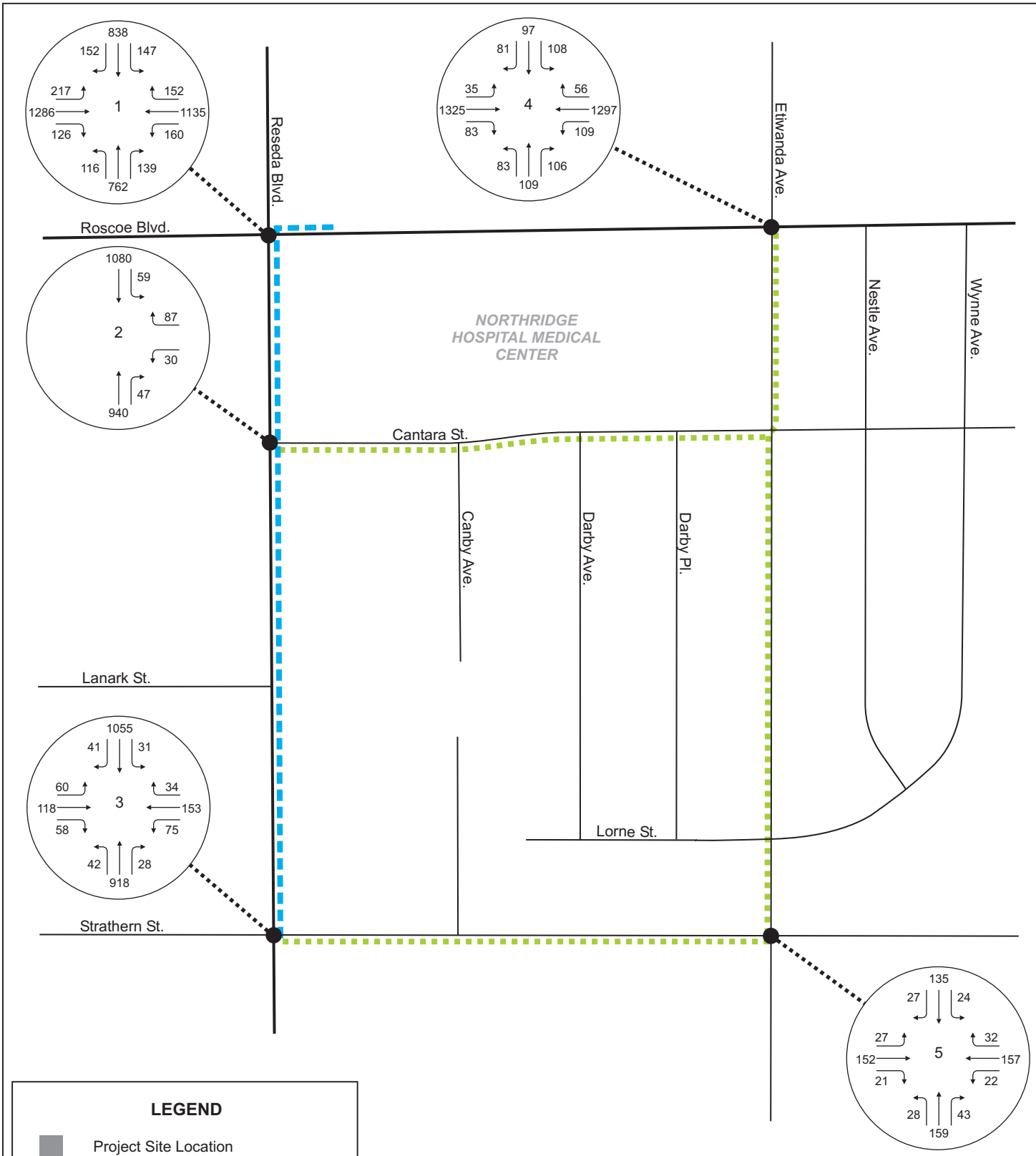
Table 6 provides the a.m. and p.m. peak-hour results of this analysis for the study intersections.

Table 6 – Level of Service Calculations – Future (Year-2015)
Without-Project Construction Conditions

	Study Intersections	Future Without Project			
		AM Peak Hour		PM Peak Hour	
		V/C or Delay	LOS	V/C or Delay	LOS
1	Reseda Boulevard & Roscoe Boulevard	0.855	D	0.823	D
2	Reseda Boulevard & Cantara Street	34.5	D	36.9	**E**
3	Reseda Boulevard & Strathern Street	0.501	A	0.435	A
4	Etiwanda Avenue & Roscoe Boulevard	0.626	B	0.548	A
5	Etiwanda Avenue & Strathern Street	10.4	B	8.9	A

Under this scenario, four of the five study intersections except would continue to operate at LOS D or better during the weekday a.m. and p.m. peak hours. Operations at the study intersection of Reseda Boulevard and Cantara Street would worsen from LOS D to E in the p.m. peak hour.

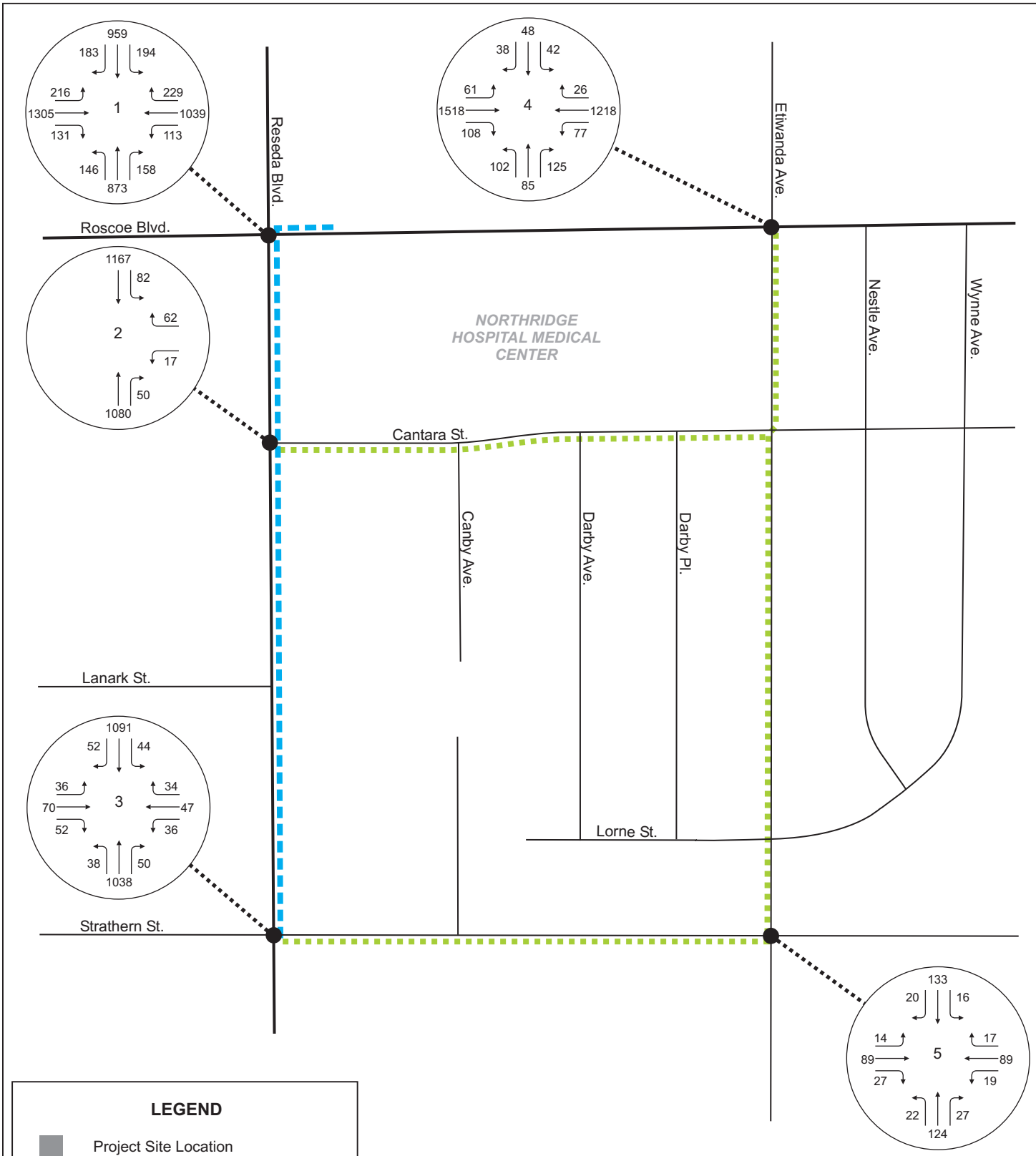
The study intersection analysis worksheets for this scenario are provided in Appendix D of this report. The analyzed peak-hour traffic volumes at the study intersections for this scenario are provided on Figure 7 (a.m. peak) and Figure 8 (pm. peak).



KOA CORPORATION
PLANNING & ENGINEERING

Reseda Pipeline Project — Figure 7

Future (2015) Without Project - AM Peak Hour Traffic Volumes



KOA CORPORATION
PLANNING & ENGINEERING

Reseda Pipeline Project — Figure 8

Future (2015) Without Project - PM Peak Hour Traffic Volumes

4.4 Study Roadway Segment Volumes – 2015

Table 7 provides the average daily traffic volumes for year-2015 without-Project conditions at the study roadway segments, based on the application of ambient growth and the calculated daily trips from the included area projects.

Table 7 – Study Roadway Segments – Future (Year 2015)
Without-Project Daily Vehicle Volumes

	Street Segments	Future Base ADT
A	Roscoe Boulevard Between Reseda Boulevard and Etiwanda Avenue	38,075
B	Reseda Boulevard Between Roscoe Boulevard and Cantara Street	32,478
C	Reseda Boulevard Between Cantara Street and Strathern Street	31,334
D	Cantara Street Between Reseda Boulevard and Etiwanda Avenue	2,381
E	Etiwanda Avenue Between Roscoe Boulevard and Cantara Street	5,344
F	Etiwanda Avenue Between Cantara Street and Strathern Avenue	3,157
G	Strathern Avenue Between Reseda Boulevard and Etiwanda Avenue	2,994

The highest daily vehicle volume is on Roscoe Boulevard between Reseda Boulevard and Etiwanda Avenue.

5. Project Construction Period Trip Generation

This section provides definitions for truck and employee vehicle trip generation during the peak period of project construction, along with the distribution and assignment of those trips to the study area roadway network. To evaluate a worst-case scenario for construction trip generation of the proposed Project, it is assumed that each employee will drive to and from work with some carpooling.

This is a planning-level analysis of construction activity, used for the purposes of determining traffic impacts during the project construction period. Prior to initiating construction, a detailed construction plan will be developed by the construction manager to identify necessary resources and to define the construction supervisory and technical field organization and staffing levels required for the project. The methods and procedures for sequencing and implementing construction operations will also be detailed in the construction plan. In addition, a project safety program will be developed by the operator, consistent with federal and state requirements. This is a standard LADWP procedural requirement.

Therefore, basic construction details defined for the project planning process have been used to analyze potential construction-period impacts.

5.1 Project Trip Generation Methodology

Project trip generation calculations included construction employee vehicle trips and construction truck trip estimates. The trip generation totals were determined based on the most intense period of construction activity for the project.

In converting trucks to passenger car equivalents, a Passenger Car Equivalent (PCE) factor of 2.5 was assumed. This factoring was used to increase truck volumes due to the additional roadway space and design capacity utilized by larger and slower trucks. The applied value matches typical factors used in area studies that include trips generated by trucking activities. The factor is based on conservative factors defined by the Southern California Association of Governments (SCAG) Heavy Duty Truck Model.

For construction, the maximum number of employees on project roadway segment sites would be 12, of which eight employees would arrive in construction and haul trucks, and the remaining four employees would arrive in two construction pick-ups and two personal vehicles.

The maximum number of daily trucks would four construction trucks and four dump trucks. Using the 2.5 PCE factor, there would 40 equivalent daily trips (20 trips in and 20 trips out).

5.2 Project Trip Generation Calculations

In calculating peak-hour trips for the project, it is assumed that a majority of the construction employees will arrive and depart the construction work areas by personal vehicles. The morning arrival by employees is assumed to overlap the a.m. peak hour by 50 percent, with the remaining 50 percent of employees assumed to be at the sites before 7:00 a.m. The same would occur during the p.m. peak hour, with 50 percent of employees assumed to depart the site before 4:00 p.m. Therefore, the same reduction was taken for both peak periods.

During project construction activity, daily truck haul activities will occur over an eight-hour period that begins during the a.m. peak period, and is complete during the p.m. peak period.

As indicated by Table 8, project construction would generate a daily total of 48 passenger car equivalent trips, with nine trips occurring during the a.m. peak hour and nine trips occurring during the p.m. peak hour.

Table 8 – Project Trip Generation

TRIP GENERATION	AVERAGE DAILY TRIPS			AM PEAK HOUR						PM PEAK HOUR					
				Truck Trips*		Employee Trips		Total Trips		Truck Trips*		Employee Trips		Total Trips	
	Trucks*	Employee	Total	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Field Personnel	0	8	8	0	0	2	0	2	0	0	0	0	2	0	2
Haul Trucks	20	0	20	1	1	0	0	1	1	1	1	0	0	1	1
Construction Trucks	20	0	20	5	0	0	0	5	0	0	5	0	0	0	5
TOTAL TRIPS	**40**	**8**	**48**	**6**	**1**	**2**	**0**	**8**	**1**	**1**	**6**	**0**	**2**	**1**	**8**

** Truck trips include a Passenger Car Equivalency (PCE) factor of 2.5.*

Notes:

Field Personnel - Inputs were 12 field personnel for the average day of construction. Four personnel arrive in the four construction trucks and four personnel arrive in the four dump trucks. The remaining four personnel arrive in two construction pick-up trucks and two personal vehicles. 50% of the construction work crew would travel to and from the site during peak hours.

Trucks - A peak of four construction trucks and four dump trucks would travel to and from the site. Daily totals were multipled by the PCE factor. Peak hour was based on total dump/haul truck PCE divided by an eight-hour shift plus 50% of construction trucks arriving or leaving during peak

5.3 Proposed Construction Methods

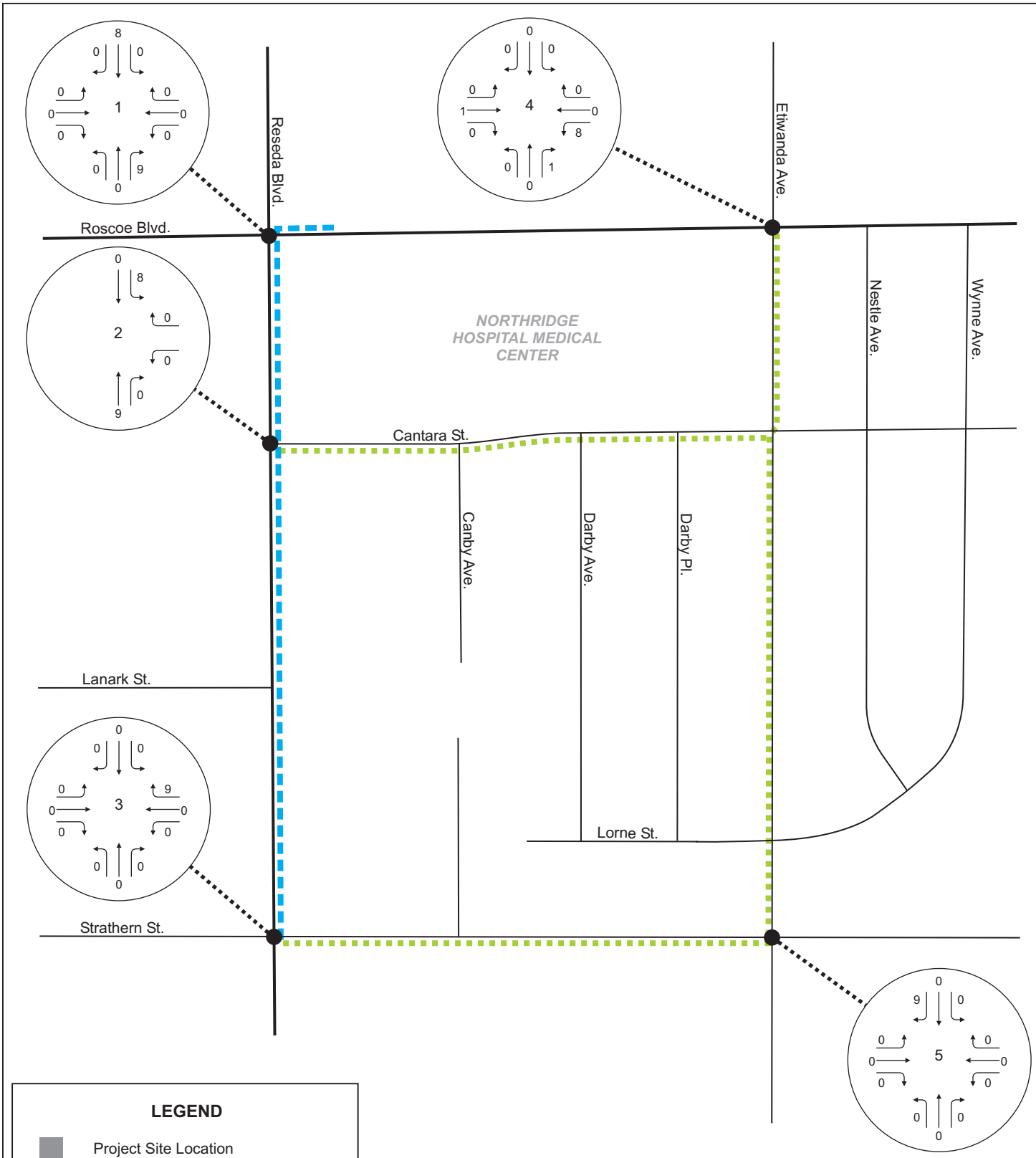
The work areas necessary to install the pipelines along the proposed Project routes are planned to be established in segments. Major intersection approach lanes would be kept intact, as much as possible.

The construction closures would be established in segments along the project corridor, with two active closures for trenching activities. The assumed approach lane configurations for the project construction period traffic analysis were created based on initial project construction plans.

Construction activity would occur Monday through Friday from approximately 7:00 a.m. to 3:30 p.m. Thus, the closure of up to two travel lanes would occur during the a.m. peak hour and p.m. peak hour as barricades.

5.4 Construction Project Trip Distribution

The distribution of construction truck and employee trips was assumed to be primarily street-oriented. Construction staging would occur at the LADWP yard near Devonshire Street and Balboa Boulevard. The closest dump site location is at the Vulcan facility located at 11520 Sheldon Street in the Sun Valley area of the City of Los Angeles.

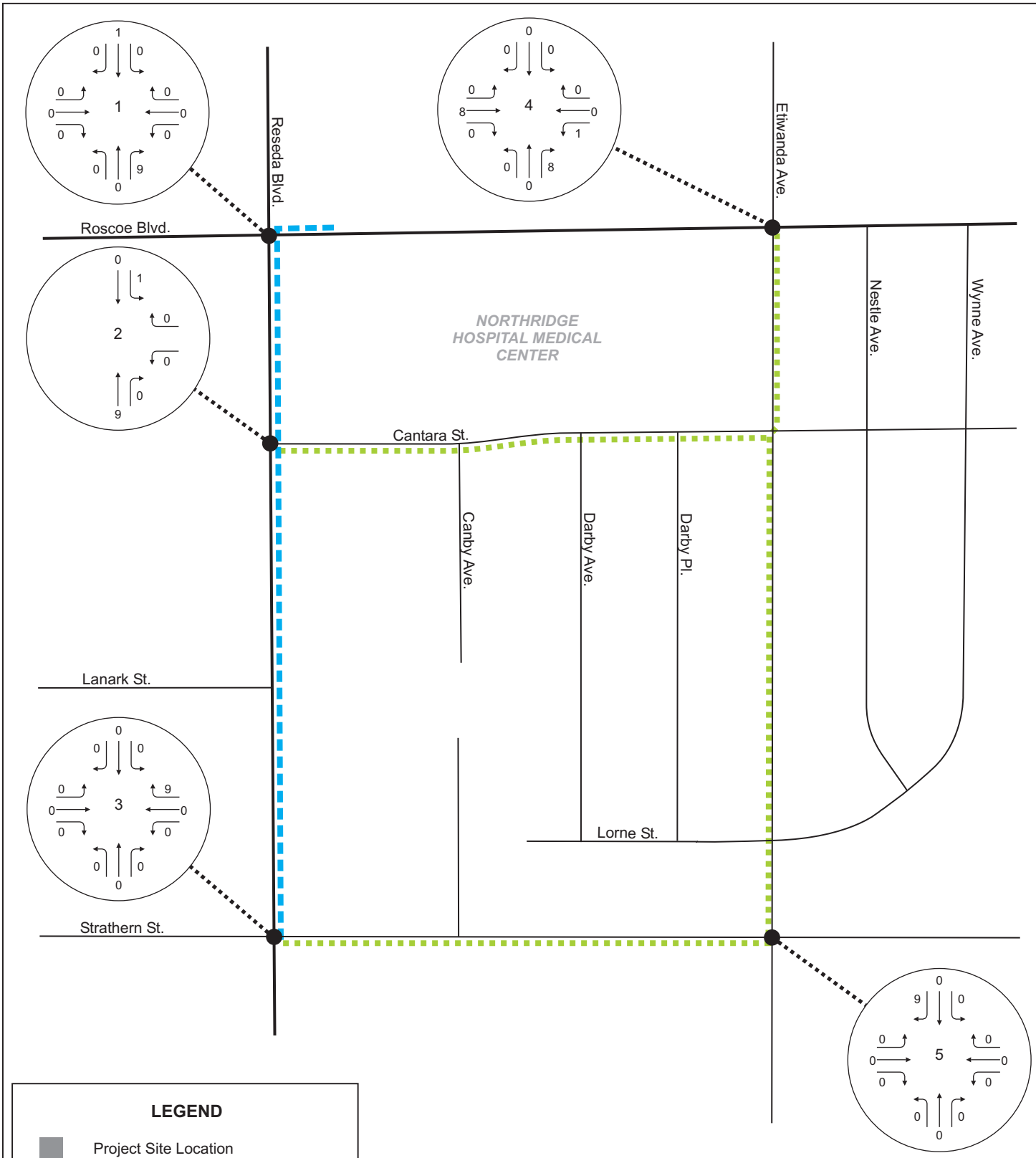


KOA CORPORATION
PLANNING & ENGINEERING

Reseda Pipeline Project

Figure 9

Project Trip Assignment - AM Peak Hour



KOA CORPORATION
PLANNING & ENGINEERING

Reseda Pipeline Project

Figure 10

Project Trip Assignment - PM Peak Hour

6. Project Construction-Period Conditions and Impacts

6.1 Significant Impact Guidelines

Traffic impacts are identified if a proposed development will result in a significant change in traffic conditions at a study intersection or roadway segment. A significant impact is typically identified if project-related traffic will cause service levels to deteriorate beyond a threshold limit specified by the overseeing agency. Impacts can also be significant if a facility is already operating below the acceptable level of service and project traffic will cause a further decline below a threshold.

The City of Los Angeles Department of Transportation has established specific thresholds for project related increases in the volume-to-capacity ratio (V/C) of signalized study intersections. The following increases in peak-hour V/C ratios are considered significant impacts:

Level of Service	Final V/C*	Project Related v/c increase
C	< 0.70 – 0.80	Equal to or greater than 0.040
D	< 0.80 – 0.90	Equal to or greater than 0.020
E and F	0.90 or more	Equal to or greater than 0.010

Note: Final V/C is the V/C ratio at an intersection, considering impacts from the project, ambient and related project growth, and without proposed traffic impact mitigations.

Where a roadway segment was forecasted to operate at LOS E or F, and lane reductions would not be required due to work area establishment, these incremental impact thresholds were applied. Roadway segment and unsignalized intersection impacts were otherwise generally determined based on changes in peak-hour level of service values to E or F due to Project construction. Study area traffic operations for the construction are discussed below, along with significant impact determinations.

6.2 Project Construction Period Study Intersection Analysis

The study intersection operations across all analyzed scenarios, for the proposed Project, are summarized in Table 9. Construction of the proposed Project would worsen operations to or within LOS E or F at two of the five study intersections. These intersections would worsen in operations during the project construction period to or within LOS E or F in either the a.m. and/or p.m. peak hour:

- Reseda Boulevard/Roscoe Boulevard – Operations would worsen from LOS D to F in the a.m. and p.m. peak hours.
- Reseda Boulevard/Cantara Street – Operations would worsen from LOS D to E in the a.m. peak hour and would worsen within LOS E in the p.m. peak hour.
- Etiwanda Avenue/Roscoe Boulevard – Operations would worsen from LOS B to F in the a.m. peak hour and would worsen from LOS A to F in the p.m. peak hour.

The worsening of operations at the Reseda Boulevard/Roscoe Boulevard intersection to LOS F in both the a.m. and p.m. peak hours is a significant impact.

The worsening of operations at the Reseda Boulevard/Cantara Street intersection within LOS E in the a.m. and p.m. peak hours is not significant per LADOT standards, but is significant based on the LOS standards applied for this study.

Table 9 – Study Intersection Impacts

	Study Intersections	Future 2015 Without Project				Future 2015 With Project				Change in V/C		Significant Impact ?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour	PM Peak Hour	
		V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS			
1	Reseda Boulevard & Roscoe Boulevard	0.855	D	0.823	D	1.428	**F**	1.484	**F**	0.573	0.661	**Yes**
2	Reseda Boulevard & Cantara Street	34.5	D	36.9	**E**	43.7	**E**	45.5	**E**	9.2	8.6	No
3	Reseda Boulevard & Strathern Street	0.501	A	0.435	A	0.772	C	0.784	C	0.271	0.349	**Yes**
4	Etiwanda Avenue & Roscoe Boulevard	0.626	B	0.548	A	1.188	**F**	1.282	**F**	0.562	0.734	**Yes**
5	Etiwanda Avenue & Strathern Street	10.4	B	8.9	A	10.4	B	8.9	A	0.0	0.0	No

The Reseda Boulevard/Strathern Street and Etiwanda Avenue/Strathern Street intersections would not be impacted, as LOS values would remain at LOS D or better.

Identified impacts would be significant and unavoidable during the construction period, but only when each specific work zone for each crew is established. Not all of the work zones will be active at the same time.

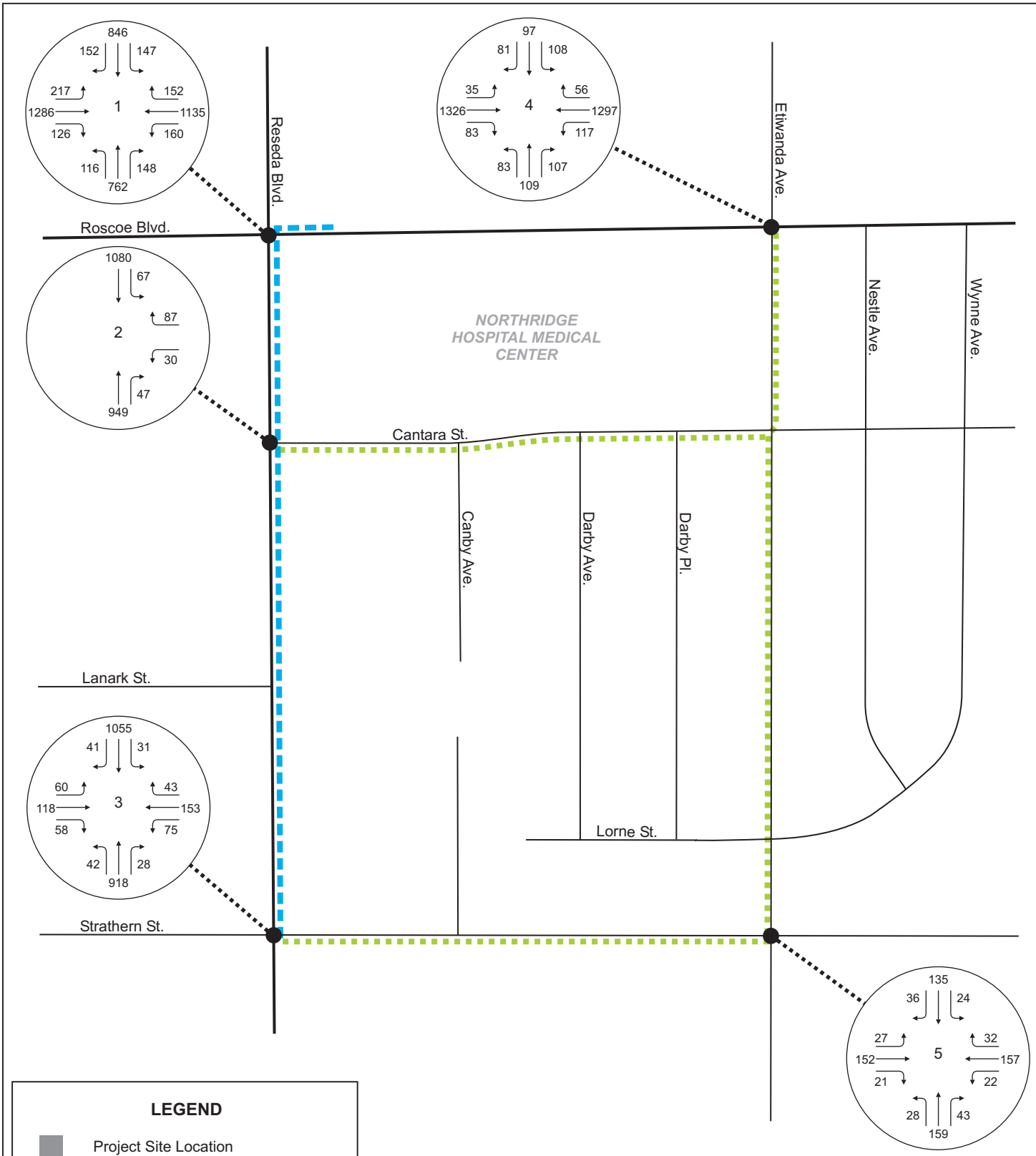
The construction period analyzed traffic volumes at the study intersections are provided on Figure 11 (a.m. peak) and Figure 12 (p.m. peak). The intersection approach lane and control assumptions for the construction-period analysis are provided on Figure 13. The level of service calculation worksheets for this analysis scenario are provided in Appendix E.

6.3 Project Construction Period Roadway Segment Analysis

The daily volumes on the study roadway segments, for conditions with and without construction of the proposed Project, are provided in Table 10. Volume percentage increases due to Project construction are provided for reference purposes. Impacts to these roadway segments are evaluated after this informational table.

Table 10 – Roadway Segment Daily Volumes

		Base Volumes				Proposed Project		
	Street Segments	Existing	Ambient Growth	Area Projects	Future Base	Project Only	Future with Project	% Increase
A	Roscoe Boulevard Between Reseda Boulevard and Etiwanda	37,134	2.0%	198	38,075	48	38,123	0.1%
B	Reseda Boulevard Between Roscoe Boulevard and Cantara Street	31,403	2.0%	447	32,478	48	32,526	0.1%
C	Reseda Boulevard Between Cantara Street and Strathern Street	30,281	2.0%	447	31,334	48	31,382	0.2%
D	Cantara Street Between Reseda Boulevard and Etiwanda	2,334	2.0%	0	2,381	48	2,429	2.0%
E	Etiwanda Avenue Between Roscoe Boulevard and Cantara Street	5,239	2.0%	0	5,344	48	5,392	0.9%
F	Etiwanda Avenue Between Cantara Street and Strathern Avenue	3,095	2.0%	0	3,157	48	3,205	1.5%
G	Strathern Avenue Between Reseda Boulevard and Etiwanda Avenue	2,904	2.0%	32	2,994	48	3,042	1.6%



LEGEND

- Project Site Location
- 12 inch ERDIP pipeline
- 8 inch ERDIP pipeline
- Study Intersection
- xx — Intersection Turn Volume

8/28/13

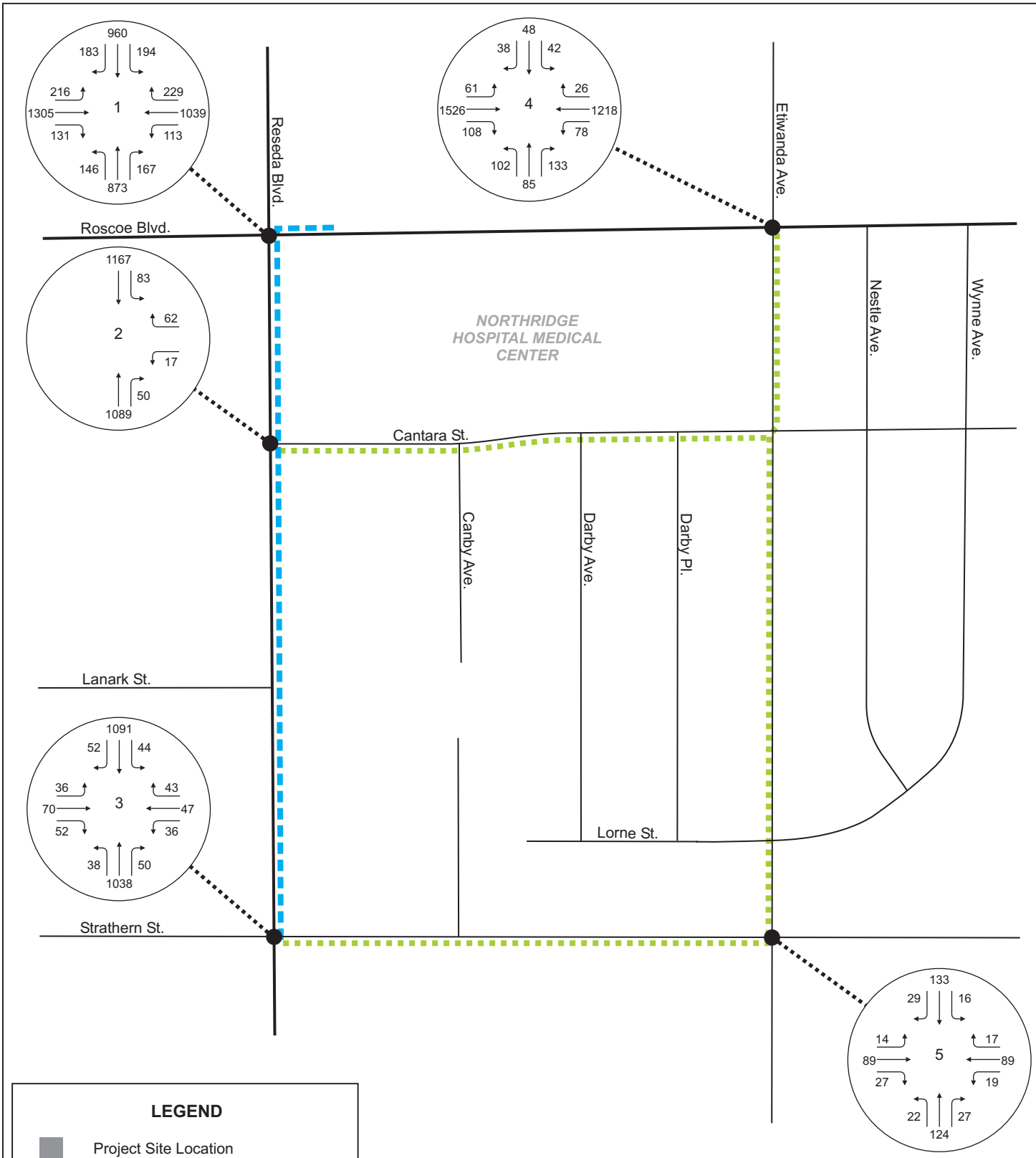
N

Not to Scale

KOA CORPORATION
PLANNING & ENGINEERING

Reseda Pipeline Project — Figure 11

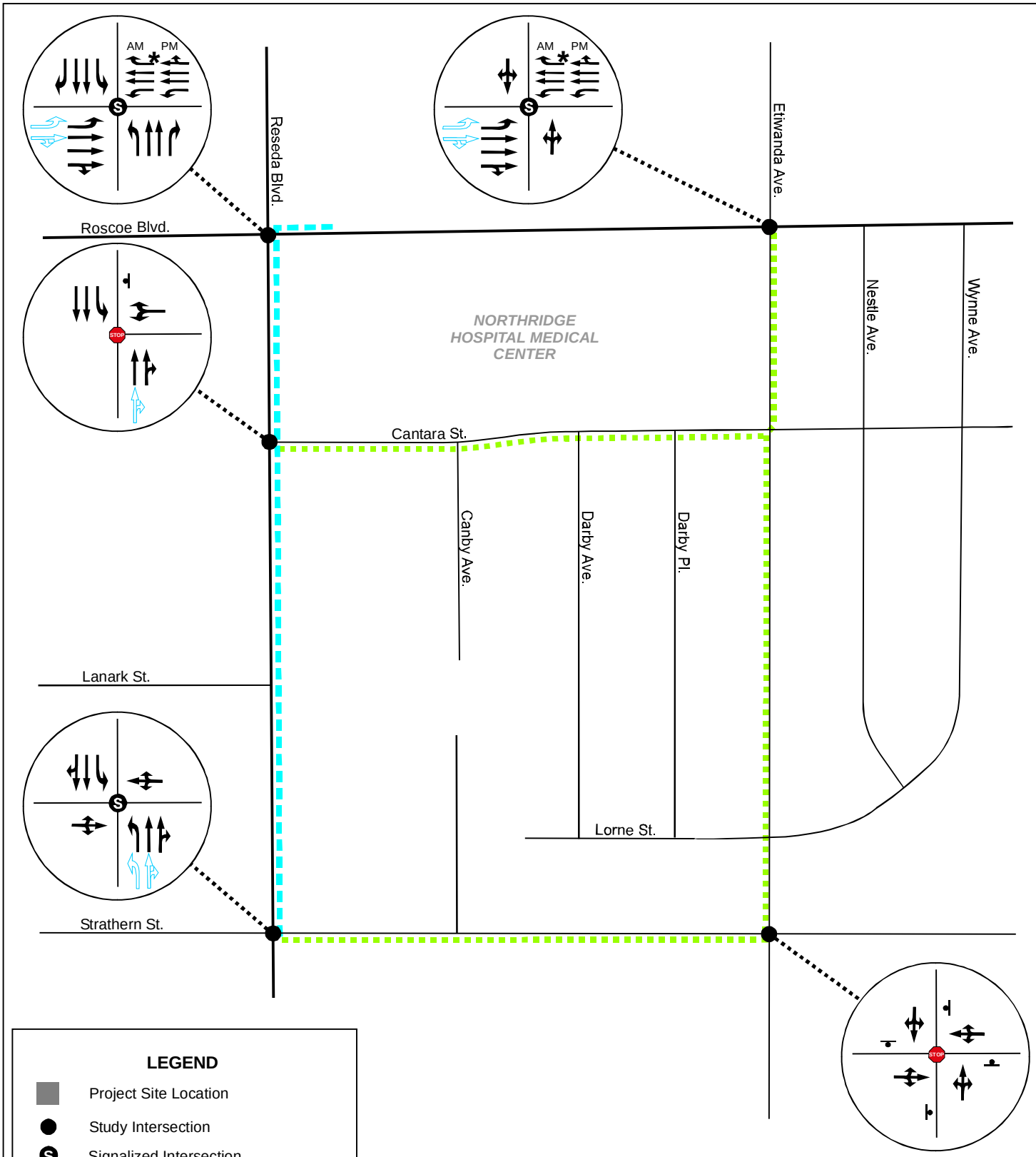
Future (2015) With Project Construction - AM Peak Hour Traffic Volumes



KOA CORPORATION
PLANNING & ENGINEERING

Reseda Pipeline Project — Figure 12

Future (2015) With Project Construction - PM Peak Hour Traffic Volumes



KOA CORPORATION
PLANNING & ENGINEERING

Reseda Pipeline Project — Figure 13

Construction Period Intersection Lane Configurations

Segment D (Cantara Street between Reseda Boulevard and Etiwanda Avenue) would have the highest percentage of Project construction vehicle trips throughout the day. The significance of impacts on the analyzed roadway segments was determined via the analysis of peak-hour volumes, discussed below.

Peak hour traffic impacts were analyzed at the study roadway segments to determine potential significant impacts at these locations. Table 11 summarizes the peak-hour volumes from the daily counts.

All of the analyzed roadway segments would operate at LOS E or F. General mitigation measures for these significant impacts are discussed at the end of this report section.

6.4 Recommended Mitigation Measures

Project construction period traffic has been determined to create significant but temporary traffic impacts at the following locations:

- Three of the five study intersections
- Three of seven study roadway segments

Specific Study Intersection Measures

Specific work zone extents will be established by LADWP as Project construction progresses along the Project corridor. Not all of the significant impacts will occur at the same time, and once segments are completed and work zones are removed and established in other areas, the designed roadway capacity will be restored and there will not be any long-term impacts.

The following specific measures are recommended to avoid impacts at the significantly-impacted study intersections, while construction activities are active in the related work zone segments:

- Reseda Boulevard/Roscoe Boulevard – The intersection would need to remain open in the a.m. and p.m. peak periods. Construction work would need to occur during the off-peak periods.
- Reseda Boulevard/Cantara Street – The intersection would need to remain open in the a.m. and p.m. peak periods. Construction work would need to occur during the off-peak periods.
- Etiwanda Avenue/Roscoe Boulevard – The intersection would need to remain open in the a.m. and p.m. peak periods. Construction work would need to occur during the off-peak periods.

Application of these measures will reduce the significant worsening of operations at the study intersections. All identified significant study intersection impacts would be mitigated with implementation of these measures during the construction period.

Table 11 – Peak-Hour Study Roadway Segment Impacts

	Street Segments	Peak Period	Base Volumes										Proposed Project					
					Existing					Future Base						Future with Project		
			# of Lanes	Capacity	Volumes	V/C	LOS	Ambient Growth	Area Projects	Volumes	V/C	LOS	# of Lanes	Capacity	Project Only	Volumes	V/C	LOS
A	Roscoe Boulevard	AM	5	4,000	3,002	0.751	C	2.0%	21	3,083	0.771	C	3	2,400	9	3,092	1.288	**F**
	Between Reseda Boulevard and Etiwanda Avenue	PM	6	4,800	2,994	0.624	B	2.0%	15	3,075	0.641	B	4	3,200	9	3,084	0.964	**E**
B	Reseda Boulevard	AM	4	3,200	2,079	0.650	B	2.0%	77	2,198	0.687	B	3	2,400	9	2,207	0.920	**E**
	Between Roscoe Boulevard and Cantara Street	PM			2,254	0.704	C	2.0%	47	2,376	0.743	C			9	2,385	0.994	**E**
C	Reseda Boulevard	AM	4	3,200	1,934	0.604	B	2.0%	77	2,050	0.641	B	3	2,400	9	2,059	0.858	**D**
	Between Cantara Street and Strathern Street	PM			2,243	0.701	C	2.0%	47	2,365	0.739	C			9	2,374	0.989	**E**
D	Cantara Street	AM	2	1,200	217	0.181	A	2.0%	0	221	0.184	A	2	2,400	9	230	0.096	A
	Between Reseda Boulevard and Etiwanda Avenue	PM			200	0.167	A	2.0%	0	204	0.170	A			9	213	0.089	A
E	Etiwanda Avenue	AM	2	1,200	520	0.433	A	2.0%	0	530	0.442	A	2	2,400	9	539	0.225	A
	Between Roscoe Boulevard and Cantara Street	PM			472	0.393	A	2.0%	0	481	0.401	A			9	490	0.204	A
F	Etiwanda Avenue	AM	2	1,200	312	0.260	A	2.0%	0	318	0.265	A	2	2,400	9	327	0.136	A
	Between Cantara Street and Strathern Avenue	PM			267	0.223	A	2.0%	0	272	0.227	A			9	281	0.117	A
G	Strathern Avenue	AM	2	1,200	396	0.330	A	2.0%	15	419	0.349	A	2	2,400	9	428	0.178	A
	Between Reseda Boulevard and Etiwanda Avenue	PM			279	0.233	A	2.0%	7	300	0.250	A			9	309	0.129	A

General Measures

The following general measures are recommended for implementation as part of project construction planning and mobilization, in order to provide safe movement of traffic within the areas of reduced capacity once construction activities are underway:

- Prior to construction, a construction traffic control plan shall be prepared by the Los Angeles Department of Water and Power for review and approval by the Los Angeles Department of Transportation.

- The plan shall include, at a minimum, signage along all construction corridors in advance of the start of construction, warning of potential delays once construction starts.

- The plan should include signage to alert motorists to temporary or limited access points to adjacent properties; appropriate barricades for road closures; construction speed limit signage along the haul route; and parking restrictions during construction.

- A detour plan should be developed, including identification of wayfinding signage locations, to encourage traffic diversions for through traffic to multiple parallel routes such as Wilbur Avenue and Lindley Avenue, and other corridors.

- Traffic shall be controlled during construction by adhering to the guidelines contained in Standard Specifications for Public Works Construction used by many municipalities in California and Caltrans' Traffic Manual, Chapter 5, "Manual of Traffic Controls for Construction and Maintenance Work Zones" and applicable City requirements. These guidelines provide methods to minimize construction effects on traffic flow.

Roadway Segment Impacts

Project construction activities will create significant but temporary impacts at all of the analyzed study roadway segments. Application of the general measures listed above will mitigate potential impacts along these segments, to the extent feasible with reduced capacity provisions.

7. Congestion Management Program (CMP) Analysis

This section demonstrates the ways in which this traffic study was prepared to be in conformance with the procedures mandated by the County of Los Angeles Congestion Management Program.

The Congestion Management Program (CMP) was created statewide because of Proposition 111 and has been implemented locally by the Los Angeles County Metropolitan Transportation Authority (LACMTA). The CMP for Los Angeles County requires the analysis of the traffic impacts of individual development projects with potentially regional significance. A specific system of arterial roadways plus all freeways comprises the CMP system. In conformance with CMP Transportation Impact Analysis (TIA) Guidelines, a traffic impact analysis is conducted at:

- CMP arterial monitoring intersections, including freeway on-ramps or off-ramps, where the proposed project would add 50 or more vehicle trips during either morning or afternoon weekday peak hours.

- CMP mainline freeway-monitoring locations, where the project would add 150 or more trips, in either direction, during the either the morning or afternoon weekday peak hours.

Truck trips within the totals below have been adjusted by a passenger-car equivalent (PCE) factor of 2.5, as explained within the analysis. Construction employee vehicle trips have also been included.

Impacts to CMP Arterials

The nearest CMP monitoring location to the study area is Victory Boulevard at Reseda Boulevard, which is located approximately one mile south of the project site. Based on the trip generation and distribution of the project, it is not expected that 50 or more construction project trips would be added to the nearby CMP intersections. Therefore, no further analysis of potential CMP impacts is required.

Impacts to CMP Freeways

The nearest CMP mainline freeway-monitoring locations to the project site are on the US-101 freeway at Winnetka Avenue and I-405 freeway north of Roscoe Boulevard. The proposed project is expected to add less than 150 new trips per hour, in either direction, to any freeway segment based on the project trip generation defined in Table 9. Therefore, no further analysis of CMP freeway monitoring stations is required.

8. Conclusions

The following is concluded from the traffic impact analysis conducted for this report.

This report documents the traffic analysis prepared by KOA Corporation to assess the traffic impact of the proposed Reseda Boulevard Pipeline Project (proposed project), located in the San Fernando Valley area within the City of Los Angeles. The City of Los Angeles Department of Water and Power (LADWP) is proposing to replace an existing public water distribution main with earthquake ductile iron pipe. The proposed project is part of LADWP long-term seismic improvement program for the water system.

Post-project, or operational, traffic impacts will be less than significant as the pipeline will not require active management to operate. Project construction period traffic has been determined to create significant but temporary traffic impacts at the following locations:

- Three of the five project study intersections
- Three of the seven project study roadway segments

A summary of the project analysis recommendations is provided below.

Recommended Traffic Mitigation Measures – Study Intersections

The following specific measures are recommended to avoid impacts at the significantly-impacted study intersections, while construction activities are active in the related work zone segments:

- Reseda Boulevard/Roscoe Boulevard – The intersection would need to remain open in the a.m. and p.m. peak periods. Construction work would need to occur during the off-peak periods.
- Reseda Boulevard/Cantara Street – The intersection would need to remain open in the a.m. and p.m. peak periods. Construction work would need to occur during the off-peak periods.
- Etiwanda Avenue/Roscoe Boulevard – The intersection would need to remain open in the a.m. and p.m. peak periods. Construction work would need to occur during the off-peak periods.

Recommended Traffic Mitigation Measures – Study Roadway Segments

The following general measures are recommended for implementation as part of project construction planning and mobilization, in order to provide safe movement of traffic within the areas of reduced capacity once construction activities are underway:

- Prior to construction, a construction traffic control plan shall be prepared by the Los Angeles Department of Water and Power for review and approval by the Los Angeles Department of Transportation.
- The plan shall include, at a minimum, signage along all construction corridors in advance of the start of construction, warning of potential delays once construction starts.
- The plan should include signage to alert motorists to temporary or limited access points to adjacent properties; appropriate barricades for road closures; construction speed limit signage along the haul route; and parking restrictions during construction.

- A detour plan should be developed, including identification of wayfinding signage locations, to encourage traffic diversions for through traffic to multiple parallel routes such as Wilbur Avenue and Lindley Avenue, and other corridors.

- Traffic shall be controlled during construction by adhering to the guidelines contained in Standard Specifications for Public Works Construction used by many municipalities in California and Caltrans' Traffic Manual, Chapter 5, "Manual of Traffic Controls for Construction and Maintenance Work Zones" and applicable City requirements. These guidelines provide methods to minimize construction effects on traffic flow.

Recommended Traffic Control Design Considerations

To mitigate Project impacts, the final design plans for the Project should minimize the locations of complete roadways closures and to minimize the number and duration of lane closures. Closure of entire roadways will not be necessary for typical construction activities.

LADWP will be required to prepare worksite traffic control plans and detour plans to provide the travel lanes specified to remain open during construction. The plans must be prepared by a registered traffic or civil engineer, as appropriate based on City of Los Angeles permit guidelines, for review and approval.

Caltrans should be contacted to obtain permits for the transport of over-sized loads.

Construction of the Project could potentially impact pedestrian movements on sidewalks and at crosswalk locations. Marked pedestrian crosswalks at signalized intersection will be maintained for a majority of the Project construction duration, as the Project mitigation measures will keep intersection approaches open during most hours of the day. Any temporarily closed crosswalk locations should be supplemented by a maintained crosswalk at the opposite leg of the intersection, especially when a school or transit stop is located nearby.

Impacts to transit service would be likely along Project segments during construction. Temporary stop relocations/closures would likely be necessary based on the roadway width needed for Project construction.

Traffic control plans should be developed in consultation with local transit agencies to minimize impacts to passenger loading areas and to minimize travel times on scheduled transit routes. All affected transit agencies must be contacted to provide for any required modifications or temporary relocation of transit facilities.

Overall Conclusions

There are no measures that can be implemented to make all Project impacts less than significant. These impacts will be temporary in nature and will not have a lasting impact on the study roadways or the adjacent roadway systems, including monitoring stations of the Los Angeles County Congestion Management Program on area arterials and freeways. Daily roadway and peak-hour volumes have been analyzed to achieve an understanding of the magnitude of potential roadway lane closures during construction.

Once completed, the proposed Project will not create any significant impacts on the area traffic circulation system. Construction worksite traffic control and detour plans to reduce the temporary Project construction impacts will be required that incorporate the recommended mitigation measures.

The Project will not generate any new measurable and regular vehicle trips during the operations period, and long-term mitigation measures are therefore not required.

APPENDIX A
Traffic Count Data

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

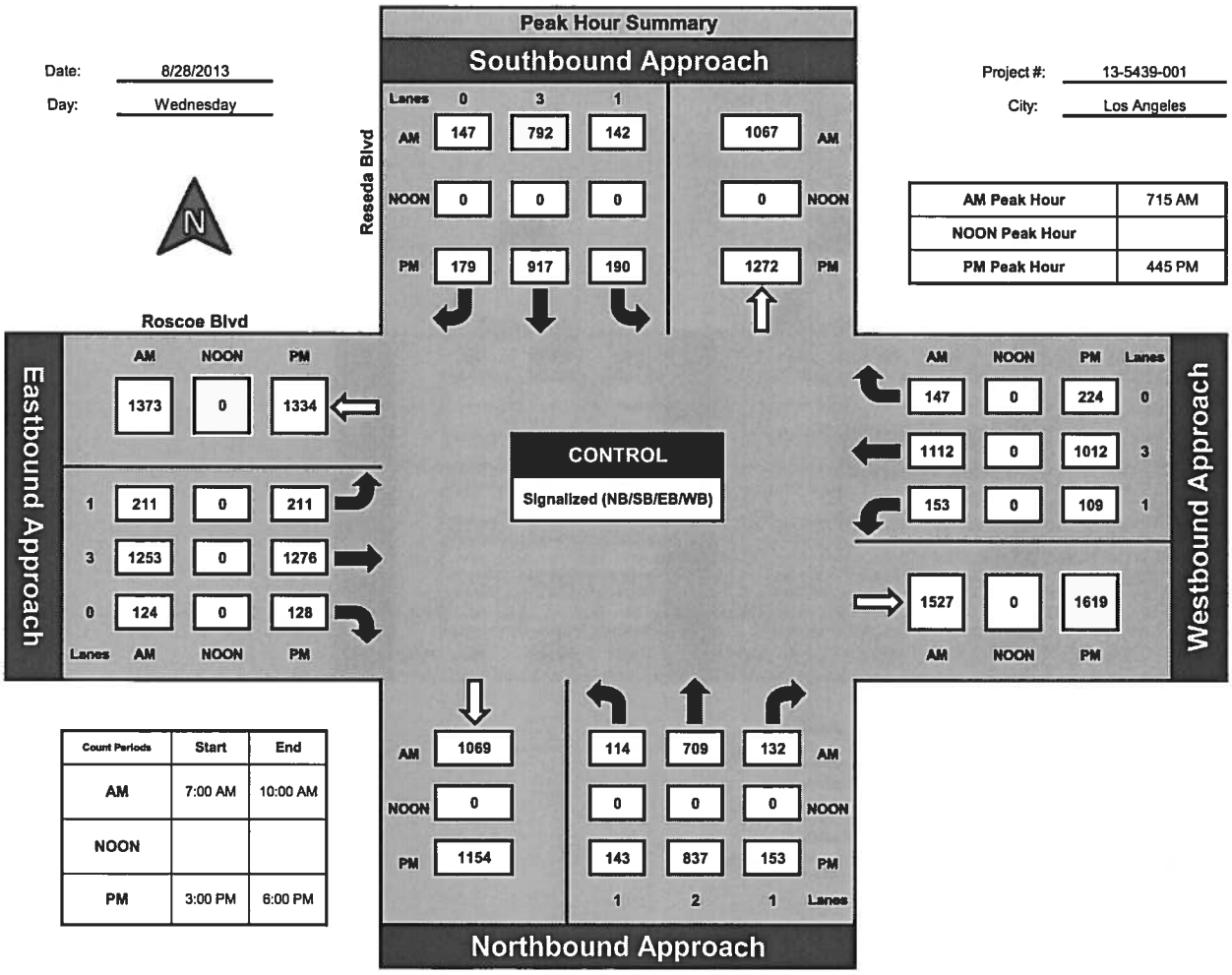
Reseda Blvd and Roscoe Blvd , Los Angeles

Date: 8/28/2013

Day: Wednesday

Project #: 13-5439-001

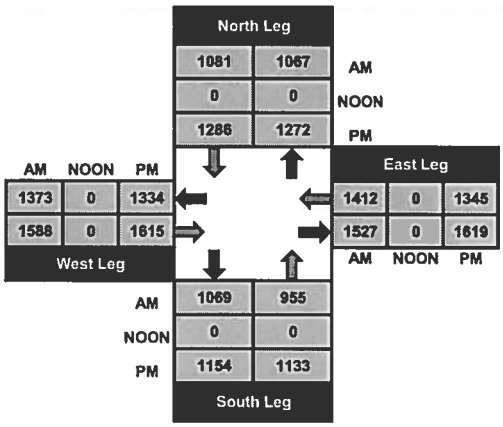
City: Los Angeles



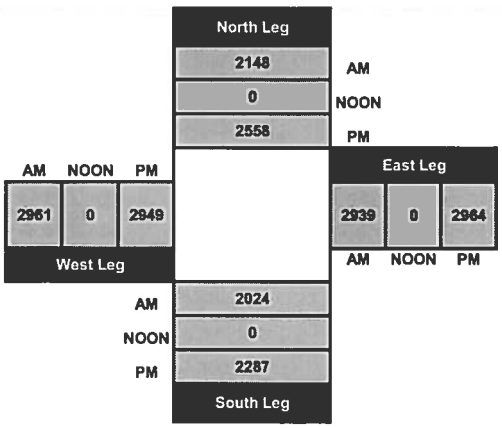
AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	445 PM

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5439 Cars-001

Day: Wednesday

TOTALS

City: Los Angeles

Date: 8/28/2013

AM

NS/EW Streets:	Reseda Blvd			Reseda Blvd			Roscoe Blvd			Roscoe Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANE5:	1	2	1	1	3	0	1	3	0	1	3	0	
7:00 AM	17	103	29	28	149	23	29	189	22	22	215	21	847
7:15 AM	30	173	26	20	194	39	44	240	17	37	268	34	1122
7:30 AM	26	184	41	31	173	28	72	352	39	29	292	41	1308
7:45 AM	33	181	31	50	207	40	52	336	37	48	247	34	1296
8:00 AM	25	171	34	41	218	40	43	325	31	39	305	38	1310
8:15 AM	29	145	32	39	209	33	51	201	28	29	229	31	1056
8:30 AM	22	148	25	34	153	21	48	231	19	40	228	70	1039
8:45 AM	34	161	23	44	145	26	32	163	16	28	176	50	898
9:00 AM	32	144	24	37	122	34	45	198	20	27	141	49	873
9:15 AM	26	121	30	46	179	39	33	146	23	20	141	51	855
9:30 AM	23	157	31	38	120	42	24	174	19	33	157	44	862
9:45 AM	24	154	24	52	162	36	34	166	27	19	152	34	884
	NL	NT	NR	5L	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	321	1842	350	460	2031	401	507	2721	298	371	2551	497	12350
APPROACH %'s :	12.77%	73.30%	13.93%	15.91%	70.23%	13.87%	14.38%	77.17%	8.45%	10.85%	74.61%	14.54%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	114	709	132	142	792	147	211	1253	124	153	1112	147	5036
PEAK HR FACTOR :		0.951			0.904			0.857			0.924		0.961

CONTROL : Signalized (NB/SB/EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5439 Cars-001

Day: Wednesday

City: Los Angeles

Date: 8/28/2013

TOTALS

PM

NS/EW Streets:	Reseda Blvd			Reseda Blvd			Roscoe Blvd			Roscoe Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	3	0	1	3	0	1	3	0	
3:00 PM	22	187	33	40	198	49	50	244	24	28	239	37	1151
3:15 PM	23	204	36	49	225	41	52	277	30	26	196	31	1190
3:30 PM	38	208	33	33	182	42	58	237	28	38	214	57	1168
3:45 PM	34	197	27	58	190	35	63	220	29	20	210	51	1134
4:00 PM	27	161	37	56	201	36	50	257	27	29	255	58	1194
4:15 PM	35	185	33	64	247	51	45	251	22	23	198	47	1201
4:30 PM	27	196	35	39	177	49	48	271	31	35	211	69	1188
4:45 PM	36	203	49	38	210	37	53	305	41	28	224	56	1280
5:00 PM	32	197	39	53	219	46	43	315	36	31	277	58	1346
5:15 PM	37	233	39	50	261	53	56	332	33	21	248	49	1412
5:30 PM	38	204	26	49	227	43	59	324	18	29	263	61	1341
5:45 PM	30	215	34	61	245	31	38	262	32	34	251	44	1277
	NL	NT	NR	5L	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	379	2390	421	590	2582	513	615	3295	351	342	2786	618	14882
APPROACH %'s :	11.88%	74.92%	13.20%	16.01%	70.07%	13.92%	14.43%	77.33%	8.24%	9.13%	74.37%	16.50%	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	143	837	153	190	917	179	211	1276	128	109	1012	224	5379
PEAK HR FACTOR :		0.917			0.883			0.959			0.919		0.952

CONTROL : Signalized (NB/SB/EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5439 Cars-001

Day: Wednesday

Buses

City: Los Angeles

Date: 8/28/2013

AM

NS/EW Streets:	Reseda Blvd			Reseda Blvd			Roscoe Blvd			Roscoe Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	3	0	1	3	0	1	3	0	
7:00 AM	0	1	1	0	3	1	0	3	1	0	4	3	17
7:15 AM	0	2	1	1	3	1	0	6	1	0	3	0	18
7:30 AM	0	3	0	1	4	0	0	5	0	1	7	0	21
7:45 AM	1	0	0	0	3	1	0	6	0	0	5	0	16
8:00 AM	0	2	3	0	2	0	0	4	0	0	5	0	16
8:15 AM	0	1	1	0	3	0	0	7	0	0	4	0	16
8:30 AM	0	2	1	0	2	1	2	12	0	0	3	0	23
8:45 AM	0	3	0	0	1	0	0	4	0	0	3	0	11
9:00 AM	0	0	0	0	2	0	0	3	0	0	2	0	7
9:15 AM	0	3	0	0	3	0	0	1	0	0	1	0	8
9:30 AM	0	1	0	0	1	0	0	3	0	0	1	0	6
9:45 AM	0	1	0	0	3	0	0	2	0	0	0	1	7
	NL	NT	NR	5L	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	19	7	2	30	4	2	56	2	1	38	4	166
APPROACH %'s :	3.70%	70.37%	25.93%	5.56%	83.33%	11.11%	3.33%	93.33%	3.33%	2.33%	88.37%	9.30%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	1	7	4	2	12	2	0	21	1	1	20	0	71
PEAK HR FACTOR :	0.600			0.800			0.786			0.656			0.960

CONTROL : 5ignalized (NB/SB/EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5439 Cars-001 **Day:** Wednesday

Buses

City: Los Angeles **Date:** 8/28/2013

PM

NS/EW Streets:	Reseda Blvd			Reseda Blvd			Roscoe Blvd			Roscoe Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	5L	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	3	0	1	3	0	1	3	0	
3:00 PM	0	3	0	0	1	1	3	10	0	0	1	0	19
3:15 PM	0	5	1	1	3	0	0	7	0	0	2	0	19
3:30 PM	0	1	0	0	3	0	1	2	0	0	2	0	9
3:45 PM	0	3	1	0	3	0	0	4	0	1	5	0	17
4:00 PM	0	2	1	0	4	0	0	5	0	0	2	0	14
4:15 PM	0	1	0	0	3	0	0	4	1	0	1	1	11
4:30 PM	0	1	0	0	2	0	0	5	0	0	1	0	9
4:45 PM	0	4	0	1	3	0	0	3	0	0	1	0	12
5:00 PM	0	1	0	0	1	1	0	5	0	0	2	0	10
5:15 PM	0	2	0	0	3	0	0	3	0	0	3	0	11
5:30 PM	0	1	0	0	2	0	0	1	0	0	0	0	4
5:45 PM	0	1	0	0	1	0	0	1	0	0	0	0	3
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	25	3	2	29	2	4	50	1	1	20	1	138
APPROACH %'s :	0.00%	89.29%	10.71%	6.06%	87.88%	6.06%	7.27%	90.91%	1.82%	4.55%	90.91%	4.55%	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	8	0	1	9	1	0	12	0	0	6	0	37
PEAK HR FACTOR :	0.500			0.688			0.600			0.500			0.949

CONTROL : Signalized (NB/5B/EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5439 Cars-001

Day: Wednesday

Cars

City: Los Angeles

Date: 8/28/2013

AM

NS/EW Streets:	Reseda Blvd			Reseda Blvd			Roscoe Blvd			Roscoe Blvd			
	NORTHBOUND			5OUTHBOUND			EASTBOUND			WESTBOUND			
LANE5:	NL 1	NT 2	NR 1	SL 1	ST 3	5R 0	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	TOTAL
7:00 AM	17	97	28	28	145	20	28	184	20	22	207	17	813
7:15 AM	30	169	25	19	186	38	44	233	15	35	262	33	1089
7:30 AM	25	179	40	30	167	28	70	345	37	27	285	41	1274
7:45 AM	32	179	29	49	199	39	52	328	36	48	239	34	1264
8:00 AM	25	167	31	41	212	37	43	315	31	39	298	38	1277
8:15 AM	28	142	31	39	201	33	51	191	28	29	220	30	1023
8:30 AM	22	138	24	34	145	19	43	215	19	39	220	68	986
8:45 AM	33	156	23	43	137	26	32	156	15	26	170	50	867
9:00 AM	32	138	22	36	115	34	44	186	20	26	135	48	836
9:15 AM	26	113	30	42	167	37	32	143	23	20	135	48	816
9:30 AM	23	155	31	36	119	40	23	168	19	32	153	42	841
9:45 AM	23	152	23	52	155	36	33	159	26	19	150	29	857
	NL	NT	NR	5L	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	316	1785	337	449	1948	387	495	2623	289	362	2474	478	11943
APPROACH %'s :	12.96%	73.22%	13.82%	16.13%	69.97%	13.90%	14.53%	76.99%	8.48%	10.92%	74.65%	14.42%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	112	694	125	139	764	142	209	1221	119	149	1084	146	4904
PEAK HR FACTOR :		0.954			0.901			0.857			0.919		0.960

CONTROL : 5ignalized (NB/SB/EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5439 Cars-001

Day: Wednesday

Cars

City: Los Angeles

Date: 8/28/2013

PM

NS/EW Streets:	Reseda Blvd			Reseda Blvd			Roscoe Blvd			Roscoe Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	3	0	1	3	0	1	3	0	
3:00 PM	22	183	32	39	194	46	47	228	24	28	232	37	1112
3:15 PM	23	199	35	45	217	40	52	266	30	26	192	28	1153
3:30 PM	36	203	32	33	177	42	55	230	28	38	207	55	1136
3:45 PM	34	190	26	56	187	35	63	212	29	19	202	50	1103
4:00 PM	27	156	36	56	191	35	47	250	26	29	248	56	1157
4:15 PM	35	176	33	64	243	48	44	243	21	22	196	42	1167
4:30 PM	26	192	35	39	174	47	47	257	31	32	202	67	1149
4:45 PM	36	194	48	37	206	36	51	301	41	26	219	56	1251
5:00 PM	32	194	39	53	215	45	43	306	36	31	275	58	1327
5:15 PM	37	231	39	50	257	51	56	328	33	21	243	49	1395
5:30 PM	38	201	26	49	221	43	59	315	18	29	261	60	1320
5:45 PM	30	213	34	61	244	31	38	257	32	33	247	44	1264
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	376	2332	415	582	2526	499	602	3193	349	334	2724	602	14534
APPROACH %'s :	12.04%	74.67%	13.29%	16.14%	70.03%	13.83%	14.53%	77.05%	8.42%	9.13%	74.43%	16.45%	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	143	820	152	189	899	175	209	1250	128	107	998	223	5293
PEAK HR FACTOR :		0.908			0.882			0.951			0.912		0.949

CONTROL : Signalized (NB/SB/EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5439 Cars-001

Day: Wednesday

Heavy Trucks

City: Los Angeles

Date: 8/28/2013

AM

NS/EW Streets:	Reseda Blvd			Reseda Blvd			Roscoe Blvd			Roscoe Blvd			
	NORTHBOUND			5OUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	5R	EL	ET	ER	WL	WT	WR	TOTAL
LANE5:	1	2	1	1	3	0	1	3	0	1	3	0	
7:00 AM	0	5	0	0	1	2	1	2	1	0	4	1	17
7:15 AM	0	2	0	0	5	0	0	1	1	2	3	1	15
7:30 AM	1	2	1	0	2	0	2	2	2	1	0	0	13
7:45 AM	0	2	2	1	5	0	0	2	1	0	3	0	16
8:00 AM	0	2	0	0	4	3	0	6	0	0	2	0	17
8:15 AM	1	2	0	0	5	0	0	3	0	0	5	1	17
8:30 AM	0	8	0	0	6	1	3	4	0	1	5	2	30
8:45 AM	1	2	0	1	7	0	0	3	1	2	3	0	20
9:00 AM	0	6	2	1	5	0	1	9	0	1	4	1	30
9:15 AM	0	5	0	4	9	2	1	2	0	0	5	3	31
9:30 AM	0	1	0	2	0	2	1	3	0	1	3	2	15
9:45 AM	1	1	1	0	4	0	1	5	1	0	2	4	20
	NL	NT	NR	SL	ST	5R	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	38	6	9	53	10	10	42	7	8	39	15	241
APPROACH %'s :	8.33%	79.17%	12.50%	12.50%	73.61%	13.89%	16.95%	71.19%	11.86%	12.90%	62.90%	24.19%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	1	8	3	1	16	3	2	11	4	3	8	1	61
PEAK HR FACTOR :	0.750			0.714			0.708			0.500			0.960

CONTROL : Signalized (NB/SB/EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5439 Cars-001

Day: Wednesday

Heavy Trucks

City: Los Angeles

Date: 8/28/2013

PM

NS/EW Streets:	Reseda Blvd			Reseda Blvd			Roscoe Blvd			Roscoe Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	3	0	1	3	0	1	3	0	
3:00 PM	0	1	1	1	3	2	0	6	0	0	6	0	20
3:15 PM	0	0	0	3	5	1	0	4	0	0	2	3	18
3:30 PM	2	4	1	0	2	0	2	5	0	0	5	2	23
3:45 PM	0	4	0	2	0	0	0	4	0	0	3	1	14
4:00 PM	0	3	0	0	6	1	3	2	1	0	5	2	23
4:15 PM	0	8	0	0	1	3	1	4	0	1	1	4	23
4:30 PM	1	3	0	0	1	2	1	9	0	3	8	2	30
4:45 PM	0	5	1	0	1	1	2	1	0	2	4	0	17
5:00 PM	0	2	0	0	3	0	0	4	0	0	0	0	9
5:15 PM	0	0	0	0	1	2	0	1	0	0	2	0	6
5:30 PM	0	2	0	0	4	0	0	8	0	0	2	1	17
5:45 PM	0	1	0	0	0	0	0	4	0	1	4	0	10
	NL	NT	NR	5L	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	3	33	3	6	27	12	9	52	1	7	42	15	210
APPROACH %'s :	7.69%	84.62%	7.69%	13.33%	60.00%	26.67%	14.52%	83.87%	1.61%	10.94%	65.63%	23.44%	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	9	1	0	9	3	2	14	0	2	8	1	49
PEAK HR FACTOR :	0.417			0.750			0.500			0.458			0.949

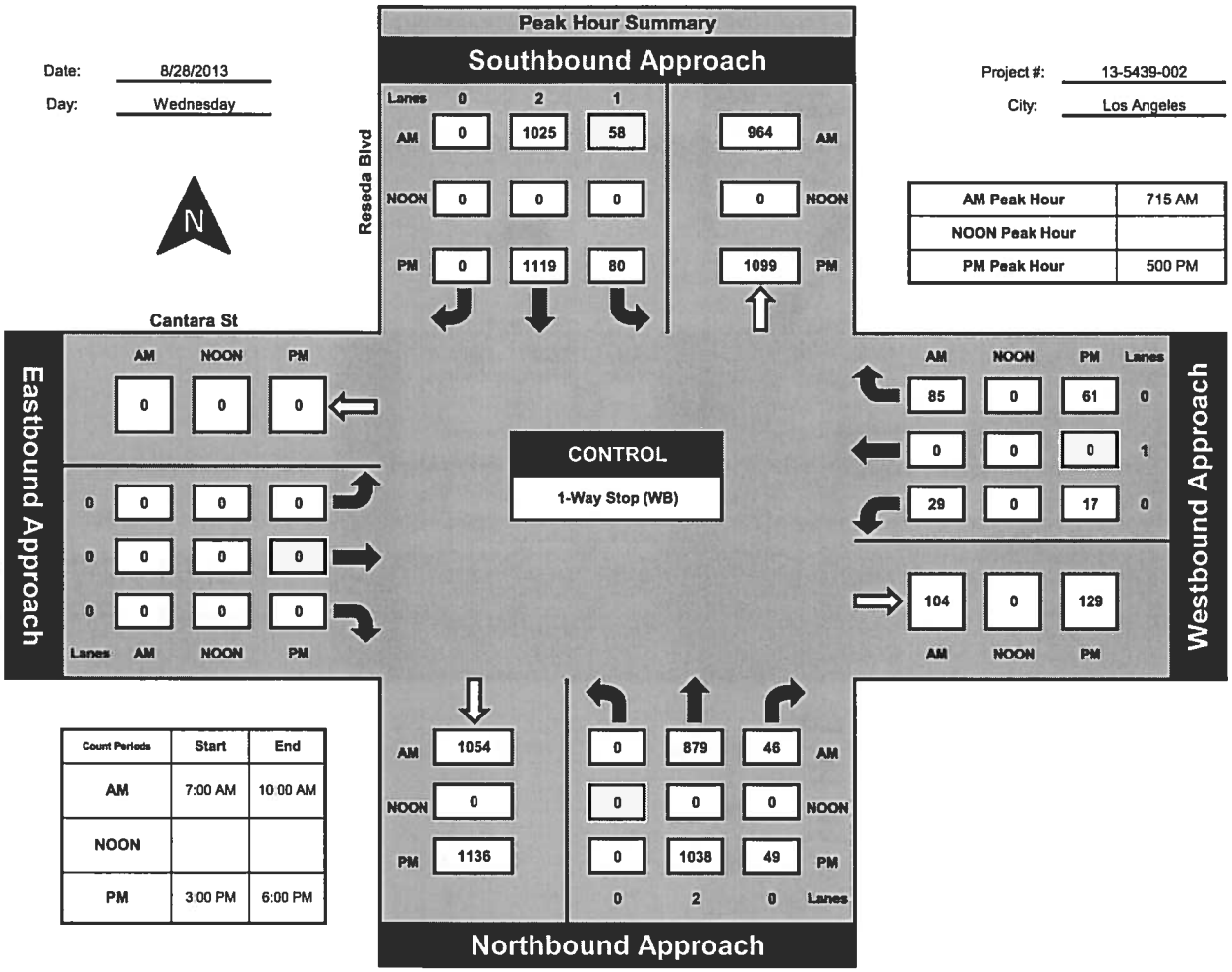
CONTROL : Signalized (NB/SB/EB/WB)

ITM Peak Hour Summary

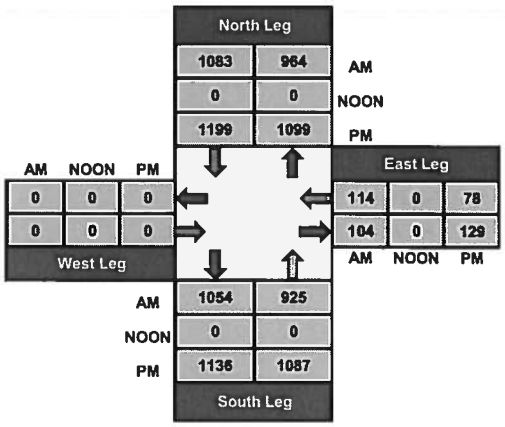
Prepared by:

National Data & Surveying Services

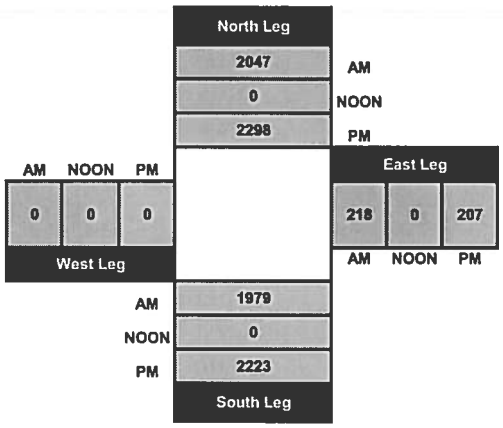
Reseda Blvd and Cantara St , Los Angeles



Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5439-002 **Day:** Wednesday

City: Los Angeles **Date:** 8/28/2013

AM

NS/EW Streets:	Reseda Blvd			Reseda Blvd			Cantara St			Cantara St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	1	2	0	0	0	0	0	1	0	
7:00 AM	0	153	9	3	196	0	0	0	0	5	0	12	378
7:15 AM	0	211	10	12	229	0	0	0	0	6	0	20	488
7:30 AM	0	234	9	10	248	0	0	0	0	6	0	25	532
7:45 AM	0	207	16	16	277	0	0	0	0	11	0	22	549
8:00 AM	0	227	11	20	271	0	0	0	0	6	0	18	553
8:15 AM	0	188	15	13	236	0	0	0	0	9	0	7	468
8:30 AM	0	191	10	8	200	0	0	0	0	7	0	21	437
8:45 AM	0	198	6	13	173	0	0	0	0	5	0	14	409
9:00 AM	0	192	9	7	175	0	0	0	0	8	0	11	402
9:15 AM	0	136	7	11	209	0	0	0	0	4	0	21	388
9:30 AM	0	207	7	7	170	0	0	0	0	2	0	11	404
9:45 AM	0	178	9	11	201	0	0	0	0	2	0	9	410
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	2322	118	131	2585	0	0	0	0	71	0	191	5418
APPROACH %'s :	0.00%	95.16%	4.84%	4.82%	95.18%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	27.10%	0.00%	72.90%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	879	46	58	1025	0	0	0	0	29	0	85	2122
PEAK HR FACTOR :		0.952			0.924			0.000			0.864		0.959

CONTROL : 1-Way Stop (WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5439-002 **Day:** Wednesday

City: Los Angeles **Date:** 8/28/2013

PM

NS/EW Streets:	Reseda Blvd			Reseda Blvd			Cantara St			Cantara St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	1	2	0	0	0	0	0	1	0	
3:00 PM	0	224	11	11	240	0	0	0	0	5	0	6	497
3:15 PM	0	249	13	12	273	0	0	0	0	6	0	11	564
3:30 PM	0	263	9	22	240	0	0	0	0	5	0	16	555
3:45 PM	1	231	13	15	236	0	0	0	0	4	0	15	515
4:00 PM	0	213	9	11	261	0	0	0	0	3	0	11	508
4:15 PM	0	224	13	11	284	0	0	0	0	2	0	12	546
4:30 PM	0	243	10	18	240	0	0	0	0	6	0	11	528
4:45 PM	1	261	9	14	275	0	0	0	0	5	0	12	577
5:00 PM	0	260	14	23	276	0	0	0	0	10	0	19	602
5:15 PM	0	258	12	22	303	0	0	0	0	2	0	21	618
5:30 PM	0	253	14	19	252	0	0	0	0	2	0	13	553
5:45 PM	0	267	9	16	288	0	0	0	0	3	0	8	591
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	2946	136	194	3168	0	0	0	0	53	0	155	6654
APPROACH %'s :	0.06%	95.53%	4.41%	5.77%	94.23%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	25.48%	0.00%	74.52%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	1038	49	80	1119	0	0	0	0	17	0	61	2364
PEAK HR FACTOR :		0.985			0.922			0.000			0.672		0.956

CONTROL : 1-Way Stop (WB)

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Reseda Blvd and Strathern St , Los Angeles

Date: 8/28/2013

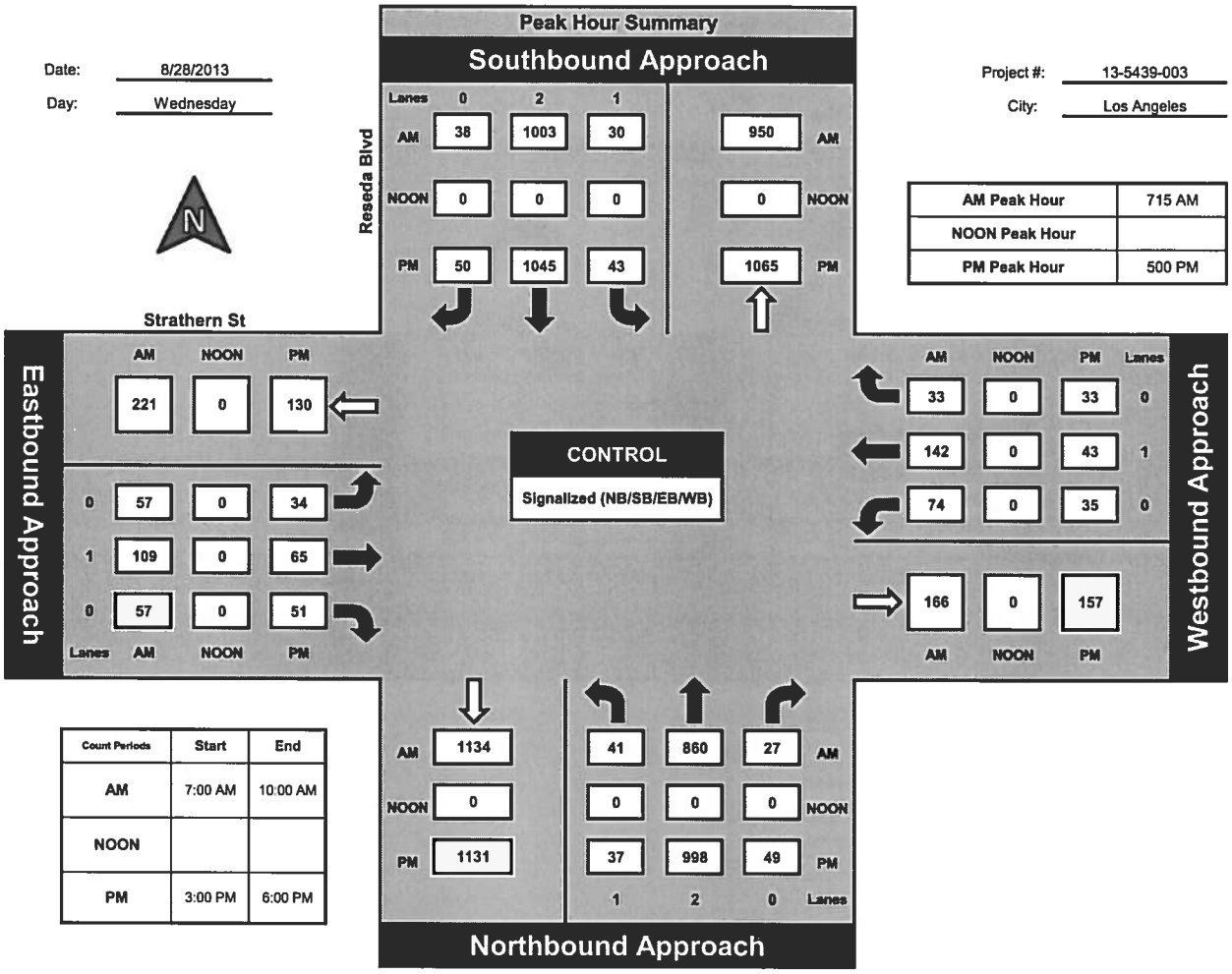
Day: Wednesday

Project #: 13-5439-003

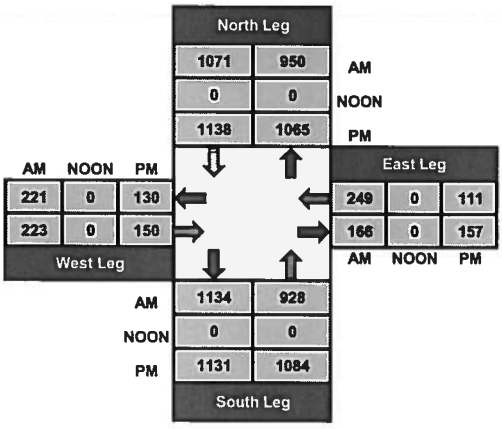
City: Los Angeles

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

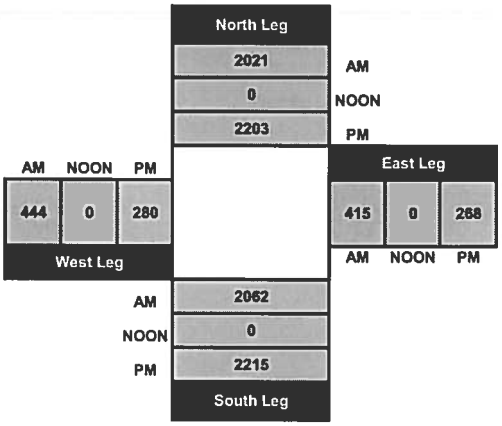
Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM



Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5439-003

Day: Wednesday

City: Los Angeles

Date: 8/28/2013

AM

NS/EW Streets:	Reseda Blvd			Reseda Blvd			Strathern St			Strathern St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	0	1	0	0	1	0	
7:00 AM	3	136	5	3	217	6	13	7	9	13	9	9	430
7:15 AM	7	196	4	2	211	8	7	20	6	19	35	10	525
7:30 AM	16	228	12	3	257	9	16	34	19	20	45	4	663
7:45 AM	15	224	5	19	243	14	15	35	20	18	50	7	665
8:00 AM	3	212	6	6	292	7	19	20	12	17	12	12	618
8:15 AM	1	194	2	7	243	6	3	12	10	8	6	8	500
8:30 AM	3	198	9	4	197	7	3	7	9	12	5	7	461
8:45 AM	3	202	0	0	166	6	4	4	10	6	2	7	410
9:00 AM	0	189	0	0	188	3	0	0	12	0	1	10	403
9:15 AM	0	143	0	0	233	7	0	0	18	0	0	9	410
9:30 AM	0	207	6	0	160	2	1	0	7	0	0	8	391
9:45 AM	0	181	9	0	200	9	0	0	17	0	0	13	429
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	51	2310	58	44	2607	84	81	139	149	113	165	104	5905
APPROACH %'s :	2.11%	95.49%	2.40%	1.61%	95.32%	3.07%	21.95%	37.67%	40.38%	29.58%	43.19%	27.23%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	41	860	27	30	1003	38	57	109	57	74	142	33	2471
PEAK HR FACTOR :		0.906			0.878			0.796			0.830		0.929

CONTROL : Signalized (NB/SB/EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5439-003

Day: Wednesday

City: Los Angeles

Date: 8/28/2013

PM

NS/EW Streets:	Reseda Blvd			Reseda Blvd			Strathern St			Strathern St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	0	1	0	0	1	0	
3:00 PM	13	210	4	6	228	10	10	19	8	12	15	10	545
3:15 PM	13	233	7	13	241	10	13	39	15	8	32	6	630
3:30 PM	7	235	8	10	205	8	16	20	11	8	18	6	552
3:45 PM	4	228	8	11	240	8	4	17	7	8	16	3	554
4:00 PM	7	204	3	4	249	10	9	8	10	11	10	13	538
4:15 PM	5	218	8	6	273	10	10	13	10	5	9	8	575
4:30 PM	6	231	9	8	233	7	7	13	5	9	13	4	545
4:45 PM	4	239	6	12	261	10	12	12	7	5	8	7	583
5:00 PM	5	255	17	8	262	12	5	16	18	7	13	8	626
5:15 PM	9	243	8	14	283	13	5	20	8	5	9	5	622
5:30 PM	9	246	14	12	229	11	6	8	15	15	8	12	585
5:45 PM	14	254	10	9	271	14	18	21	10	8	13	8	650
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	96	2796	102	113	2975	123	115	206	124	101	164	90	7005
APPROACH %'s :	3.21%	93.39%	3.41%	3.52%	92.65%	3.83%	25.84%	46.29%	27.87%	28.45%	46.20%	25.35%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	37	998	49	43	1045	50	34	65	51	35	43	33	2483
PEAK HR FACTOR :		0.975			0.918			0.765			0.793		0.955

CONTROL : Signalized (NB/SB/EB/WB)

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Etiwanda Ave and Roscoe Blvd , Los Angeles

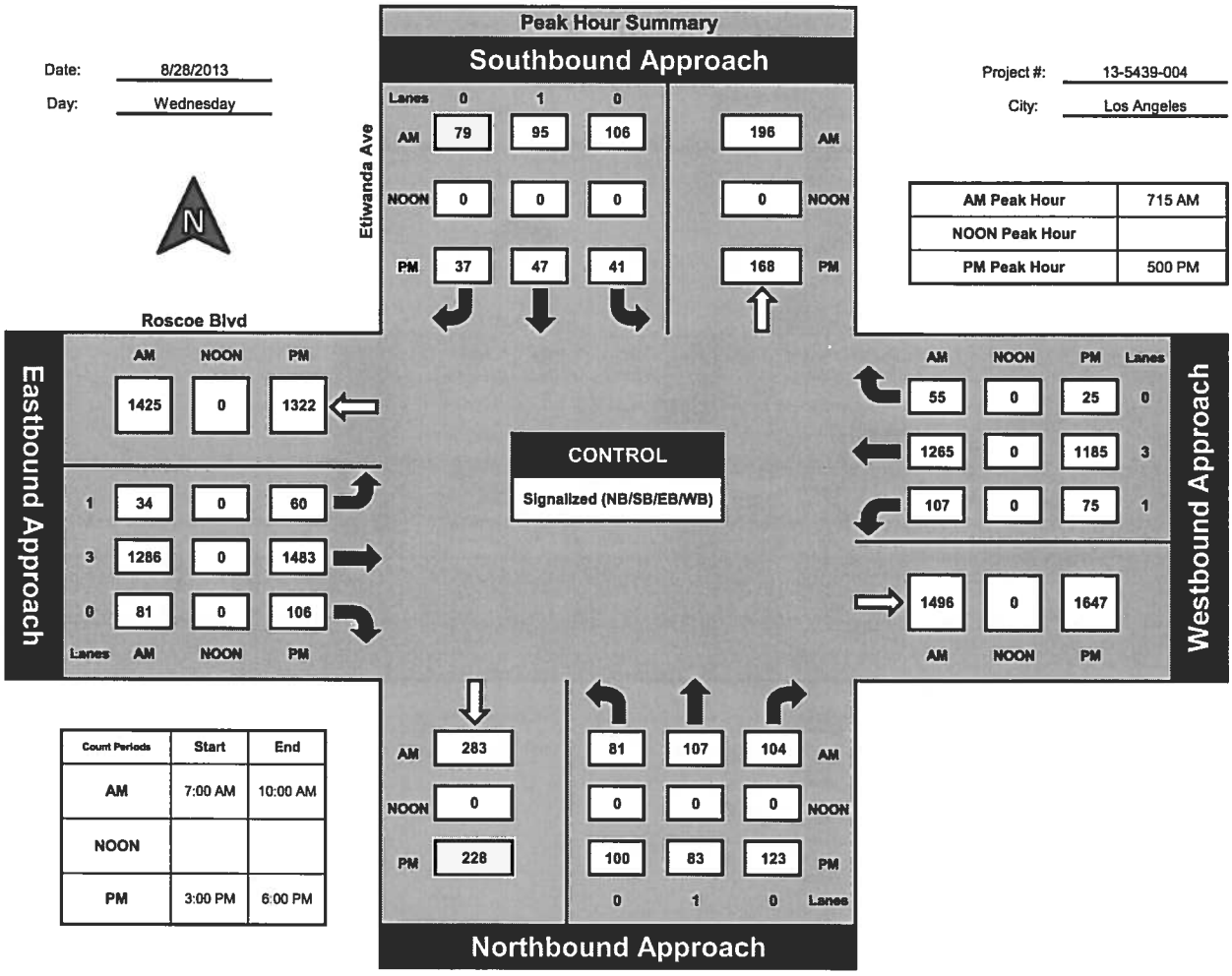
Date: 8/28/2013

Day: Wednesday

Project #: 13-5439-004

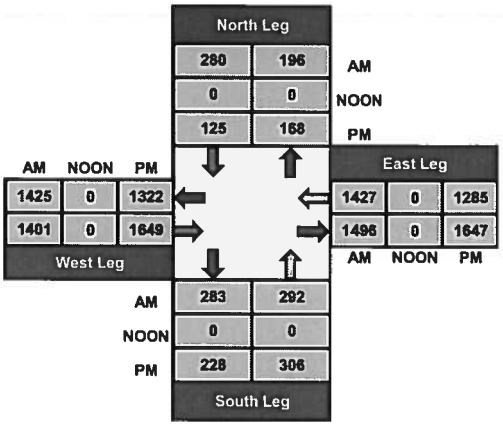
City: Los Angeles

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

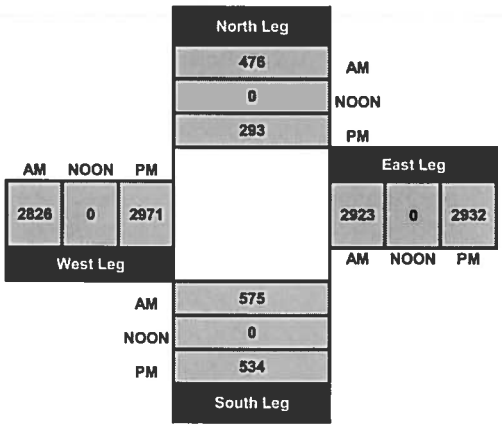


Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5439-004

Day: Wednesday

City: Los Angeles

Date: 8/28/2013

AM

NS/EW Streets:	Etiwanda Ave			Etiwanda Ave			Roscoe Blvd			Roscoe Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	3	0	1	3	0	
7:00 AM	12	6	19	4	1	12	4	203	12	18	242	2	535
7:15 AM	19	23	34	11	14	16	5	267	15	22	326	6	758
7:30 AM	23	25	33	33	32	24	8	350	13	13	316	15	885
7:45 AM	22	42	23	40	28	25	13	349	32	32	295	22	923
8:00 AM	17	17	14	22	21	14	8	320	21	40	328	12	834
8:15 AM	15	12	18	7	12	10	11	257	34	26	300	16	718
8:30 AM	22	12	22	11	13	13	7	220	24	29	308	18	699
8:45 AM	18	10	9	9	8	14	13	195	22	28	267	11	604
9:00 AM	16	9	22	4	9	11	6	190	21	23	204	5	520
9:15 AM	17	11	21	11	8	9	12	184	26	19	212	9	539
9:30 AM	18	5	18	6	9	19	7	195	16	12	196	8	509
9:45 AM	14	11	15	7	11	6	11	198	24	20	199	5	521
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	213	183	248	165	166	173	105	2928	260	282	3193	129	8045
APPROACH %'s :	33.07%	28.42%	38.51%	32.74%	32.94%	34.33%	3.19%	88.92%	7.90%	7.82%	88.60%	3.58%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	81	107	104	106	95	79	34	1286	81	107	1265	55	3400
PEAK HR FACTOR :		0.839			0.753			0.889			0.939		0.921

CONTROL : Signalized (NB/SB/EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5439-004 **Day:** Wednesday

City: Los Angeles **Date:** 8/28/2013

PM

NS/EW Streets:	Etiwanda Ave			Etiwanda Ave			Roscoe Blvd			Roscoe Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	TOTAL
3:00 PM	15	15	19	6	13	15	15	268	24	19	292	8	709
3:15 PM	23	22	23	9	15	11	29	313	28	18	251	8	750
3:30 PM	28	10	24	6	15	14	18	272	31	14	238	8	678
3:45 PM	26	10	35	8	12	10	7	296	20	19	285	12	740
4:00 PM	30	14	30	8	14	20	6	292	20	23	253	8	718
4:15 PM	22	12	25	6	11	14	10	335	32	14	244	7	732
4:30 PM	26	12	30	10	12	10	13	312	20	18	270	11	744
4:45 PM	25	26	32	5	10	12	19	342	31	19	265	14	800
5:00 PM	29	26	30	10	13	10	12	377	36	15	306	5	869
5:15 PM	21	24	32	7	12	5	14	420	29	17	300	6	887
5:30 PM	35	20	33	11	11	11	17	330	20	22	260	6	776
5:45 PM	15	13	28	13	11	11	17	356	21	21	319	8	833
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	295	204	341	99	149	143	177	3913	312	219	3283	101	9236
APPROACH %'s :	35.12%	24.29%	40.60%	25.32%	38.11%	36.57%	4.02%	88.89%	7.09%	6.08%	91.12%	2.80%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	100	83	123	41	47	37	60	1483	106	75	1185	25	3365
PEAK HR FACTOR :		0.869			0.893			0.890			0.923		0.948

CONTROL : Signalized (NB/SB/EB/WB)

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Etiwanda Ave and Strathern St , Los Angeles

Date: 8/28/2013

Day: Wednesday

Project #: 13-5439-005

City: Los Angeles

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Peak Hour Summary

Southbound Approach

Lanes	0	1	0		
AM	26	132	24	213	AM
NOON	0	0	0	0	NOON
PM	20	130	16	153	PM

Etiwanda Ave

Strathern St

Eastbound Approach

	AM	NOON	PM
	199	0	126
0	26	0	14
1	142	0	83
0	21	0	26
Lanes	AM	NOON	PM

Westbound Approach

	AM	NOON	PM	Lanes
	31	0	17	0
	146	0	84	1
	22	0	19	0
	208	0	125	
	AM	NOON	PM	

CONTROL

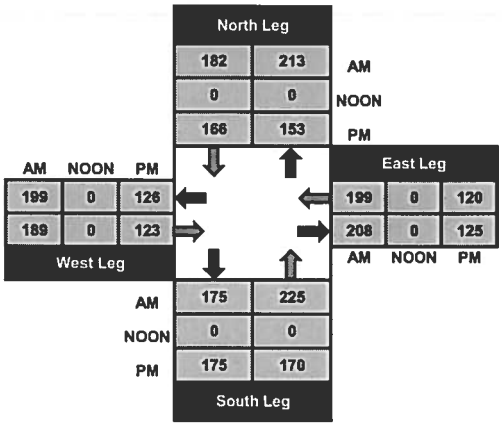
4-Way Stop (NB/SB/EB/WB)

Northbound Approach

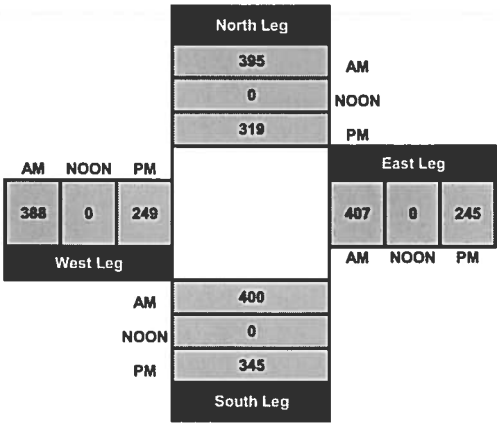
AM	175	27	156	42	AM
NOON	0	0	0	0	NOON
PM	175	22	122	26	PM
		0	1	0	Lanes

N

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5439-005

Day: Wednesday

City: Los Angeles

Date: 8/28/2013

AM

NS/EW Streets:	Etiwanda Ave			Etiwanda Ave			Strathern St			Strathern St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
7:00 AM	3	19	4	2	13	3	2	22	2	3	19	2	94
7:15 AM	5	18	9	5	23	11	5	26	6	2	28	3	141
7:30 AM	6	44	15	8	41	3	7	41	5	11	49	11	241
7:45 AM	9	56	9	8	39	8	10	47	9	7	40	13	255
8:00 AM	7	38	9	3	29	4	4	28	1	2	29	4	158
8:15 AM	2	18	3	5	20	4	4	18	5	2	14	5	100
8:30 AM	1	19	2	5	21	2	3	16	3	4	11	4	91
8:45 AM	2	12	4	4	15	5	2	9	3	3	9	2	70
9:00 AM	2	13	3	5	19	3	1	11	3	4	5	4	73
9:15 AM	4	23	3	0	15	4	3	4	9	2	4	0	71
9:30 AM	2	20	2	5	12	1	0	5	3	0	3	7	60
9:45 AM	5	14	6	3	12	3	2	8	7	3	8	1	72
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	48	294	69	53	259	51	43	235	56	43	219	56	1426
APPROACH %'s :	11.68%	71.53%	16.79%	14.60%	71.35%	14.05%	12.87%	70.36%	16.77%	13.52%	68.87%	17.61%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	27	156	42	24	132	26	26	142	21	22	146	31	795
PEAK HR FACTOR :		0.760			0.827			0.716			0.701		0.779

CONTROL : 4-Way Stop (NB/SB/EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5439-005

Day: Wednesday

City: Los Angeles

Date: 8/28/2013

PM

NS/EW Streets:	Etiwanda Ave			Etiwanda Ave			Strathern St			Strathern St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
3:00 PM	3	21	11	2	26	4	2	20	5	5	27	2	128
3:15 PM	10	28	5	4	31	3	3	46	9	3	25	3	170
3:30 PM	9	26	7	3	33	7	4	24	3	8	16	1	141
3:45 PM	6	26	8	2	27	7	3	18	10	4	15	7	133
4:00 PM	4	26	5	4	19	3	2	16	0	9	21	3	112
4:15 PM	9	23	4	3	29	4	5	17	3	2	17	4	120
4:30 PM	3	23	5	3	31	7	2	20	2	11	19	1	127
4:45 PM	5	25	5	2	32	2	4	16	5	2	16	5	119
5:00 PM	4	30	2	3	42	4	5	20	12	3	20	2	147
5:15 PM	5	31	6	4	24	5	2	27	3	2	22	4	135
5:30 PM	8	34	13	3	35	5	6	16	4	10	20	4	158
5:45 PM	5	27	5	6	29	6	1	20	7	4	22	7	139
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	71	320	76	39	358	57	39	260	63	63	240	43	1629
APPROACH %'s :	15.20%	68.52%	16.27%	8.59%	78.85%	12.56%	10.77%	71.82%	17.40%	18.21%	69.36%	12.43%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	22	122	26	16	130	20	14	83	26	19	84	17	579
PEAK HR FACTOR :		0.773			0.847			0.831			0.882		0.916

CONTROL : 4-Way Stop (NB/SB/EB/WB)

Prepared by NDS/ATD

VOLUME

Roscoe Blvd between Reseda Blvd & Etiwanda Ave

Day: Wednesday
Date: 8/28/2013

City: Los Angeles
Project #: CA13_5440_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	18,833	18,301	37,134

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			55		48		103		12:00			228		260		488	
00:15			32		36		68		12:15			251		250		501	
00:30			20		32		52		12:30			215		228		443	
00:45			26	133	23	139	49	272	12:45			225	919	249	987	474	1906
01:00			22		20		42		13:00			234		218		452	
01:15			26		21		47		13:15			243		209		452	
01:30			26		22		48		13:30			236		237		473	
01:45			21	95	15	78	36	173	13:45			290	1003	258	922	548	1925
02:00			17		16		33		14:00			263		282		545	
02:15			10		16		26		14:15			282		247		529	
02:30			13		22		35		14:30			283		302		585	
02:45			13	53	12	66	25	119	14:45			302	1130	295	1126	597	2256
03:00			15		13		28		15:00			327		287		614	
03:15			15		16		31		15:15			378		304		682	
03:30			26		12		38		15:30			318		337		655	
03:45			22	78	16	57	38	135	15:45			313	1336	314	1242	627	2578
04:00			11		14		25		16:00			358		362		720	
04:15			21		31		52		16:15			359		348		707	
04:30			26		35		61		16:30			351		344		695	
04:45			43	101	37	117	80	218	16:45			386	1454	307	1361	693	2815
05:00			50		35		85		17:00			426		350		776	
05:15			113		57		170		17:15			424		339		763	
05:30			103		100		203		17:30			420		342		762	
05:45			113	379	112	304	225	683	17:45			367	1637	310	1341	677	2978
06:00			124		112		236		18:00			346		358		704	
06:15			149		146		295		18:15			280		302		582	
06:30			225		232		457		18:30			296		356		652	
06:45			248	746	264	754	512	1500	18:45			294	1216	278	1294	572	2510
07:00			243		278		521		19:00			236		265		501	
07:15			293		360		653		19:15			219		275		494	
07:30			440		374		814		19:30			227		235		462	
07:45			420	1396	362	1374	782	2770	19:45			203	885	247	1022	450	1907
08:00			387		366		753		20:00			197		215		412	
08:15			281		321		602		20:15			253		176		429	
08:30			285		335		620		20:30			185		162		347	
08:45			236	1189	277	1299	513	2488	20:45			158	793	156	709	314	1502
09:00			259		223		482		21:00			167		134		301	
09:15			228		227		455		21:15			167		146		313	
09:30			242		221		463		21:30			172		141		313	
09:45			241	970	214	885	455	1855	21:45			157	663	136	557	293	1220
10:00			252		219		471		22:00			133		142		275	
10:15			244		217		461		22:15			112		121		233	
10:30			267		243		510		22:30			76		102		178	
10:45			271	1034	219	898	490	1932	22:45			88	409	110	475	198	884
11:00			247		247		494		23:00			74		102		176	
11:15			219		239		458		23:15			79		74		153	
11:30			239		254		493		23:30			59		80		139	
11:45			229	934	234	974	463	1908	23:45			68	280	64	320	132	600
TOTALS				7108		6945		14053	TOTALS				11725		11356		23081
SPLIT %				50.6%		49.4%		37.8%	SPLIT %				50.8%		49.2%		62.2%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	18,833	18,301	37,134

AM Peak Hour	07:15	07:15	07:15	PM Peak Hour	16:45	15:45	16:45
AM Pk Volume	1540	1462	3002	PM Pk Volume	1656	1368	2994
Pk Hr Factor	0.875	0.977	0.922	Pk Hr Factor	0.972	0.945	0.965
7 - 9 Volume	2585	2673	5258	4 - 6 Volume	3091	2702	5793
7 - 9 Peak Hour	07:15	07:15	07:15	4 - 6 Peak Hour	16:45	16:00	16:45
7 - 9 Pk Volume	1540	1462	3002	4 - 6 Pk Volume	1656	1361	2994
Pk Hr Factor	0.875	0.977	0.922	Pk Hr Factor	0.972	0.940	0.965

Prepared by NDS/ATD

VOLUME

Reseda Blvd between Roscoe Blvd & Cantara St

Day: Wednesday
Date: 8/28/2013

City: Los Angeles
Project #: CA13_5440_002

DAILY TOTALS	NB	SB	EB	WB	Total
	15,706	15,697	0	0	31,403

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	48		61				109		12:00	244		205				449	
00:15	29		44				73		12:15	256		240				496	
00:30	26		25				51		12:30	214		234				448	
00:45	15	118	32	162			47	280	12:45	235	949	224	903			459	1852
01:00	20		16				36		13:00	252		221				473	
01:15	26		12				38		13:15	242		205				447	
01:30	16		24				40		13:30	235		230				465	
01:45	8	70	10	62			18	132	13:45	258	987	214	870			472	1857
02:00	12		17				29		14:00	237		257				494	
02:15	17		10				27		14:15	229		247				476	
02:30	8		15				23		14:30	267		233				500	
02:45	10	47	9	51			19	98	14:45	282	1015	232	969			514	1984
03:00	10		5				15		15:00	244		223				467	
03:15	9		16				25		15:15	253		285				538	
03:30	32		13				45		15:30	288		257				545	
03:45	13	64	12	46			25	110	15:45	333	1118	243	1008			576	2126
04:00	12		14				26		16:00	263		260				523	
04:15	19		18				37		16:15	256		291				547	
04:30	29		20				49		16:30	287		241				528	
04:45	26	86	32	84			58	170	16:45	282	1088	278	1070			560	2158
05:00	35		46				81		17:00	275		277				552	
05:15	56		41				97		17:15	289		313				602	
05:30	70		65				135		17:30	244		248				492	
05:45	71	232	90	242			161	474	17:45	293	1101	315	1153			608	2254
06:00	87		95				182		18:00	244		241				485	
06:15	88		144				232		18:15	274		266				540	
06:30	127		131				258		18:30	285		245				530	
06:45	164	466	192	562			356	1028	18:45	222	1025	262	1014			484	2039
07:00	176		196				372		19:00	213		256				469	
07:15	224		251				475		19:15	237		220				457	
07:30	276		241				517		19:30	215		225				440	
07:45	243	919	309	997			552	1916	19:45	193	858	220	921			413	1779
08:00	235		286				521		20:00	218		201				419	
08:15	208		281				489		20:15	207		198				405	
08:30	222		210				432		20:30	182		199				381	
08:45	222	887	188	965			410	1852	20:45	147	754	194	792			341	1546
09:00	213		166				379		21:00	164		179				343	
09:15	165		222				387		21:15	181		163				344	
09:30	221		173				394		21:30	155		185				340	
09:45	193	792	209	770			402	1562	21:45	130	630	195	722			325	1352
10:00	189		175				364		22:00	141		170				311	
10:15	235		167				402		22:15	127		153				280	
10:30	233		192				425		22:30	103		118				221	
10:45	224	881	187	721			411	1602	22:45	86	457	99	540			185	997
11:00	196		201				397		23:00	94		85				179	
11:15	236		206				442		23:15	69		68				137	
11:30	224		211				435		23:30	64		69				133	
11:45	230	886	181	799			411	1685	23:45	49	276	52	274			101	550
TOTALS		5448		5461				10909	TOTALS		10258		10236				20494
SPLIT %		49.9%		50.1%				34.7%	SPLIT %		50.1%		49.9%				65.3%

DAILY TOTALS	NB	SB	EB	WB	Total
	15,706	15,697	0	0	31,403

AM Peak Hour	07:15	07:30	07:30	PM Peak Hour	15:30	17:00	17:00
AM Pk Volume	978	1117	2079	PM Pk Volume	1140	1153	2254
Pk Hr Factor	0.886	0.904	0.942	Pk Hr Factor	0.856	0.915	0.927
7 - 9 Volume	1806	1962	3768	4 - 6 Volume	2189	2223	4412
7 - 9 Peak Hour	07:15	07:30	07:30	4 - 6 Peak Hour	16:30	17:00	17:00
7 - 9 Pk Volume	978	1117	2079	4 - 6 Pk Volume	1133	1153	2254
Pk Hr Factor	0.886	0.904	0.942	Pk Hr Factor	0.980	0.915	0.927

Prepared by NDS/ATD

VOLUME

Reseda Blvd between Cantara St & Lanark St

Day: Wednesday
Date: 8/28/2013

City: Los Angeles
Project #: CA13_5440_003

DAILY TOTALS	NB	SB	EB	WB	Total
	14,931	15,350	0	0	30,281

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	50		49				99		12:00	228		197				425	
00:15	30		49				79		12:15	243		232				475	
00:30	27		24				51		12:30	209		243				452	
00:45	17	124	35	157			52	281	12:45	232	912	237	909			469	1821
01:00	19		17				36		13:00	255		216				471	
01:15	26		12				38		13:15	235		224				459	
01:30	16		27				43		13:30	236		221				457	
01:45	10	71	9	65			19	136	13:45	240	966	224	885			464	1851
02:00	15		16				31		14:00	217		222				439	
02:15	13		12				25		14:15	214		213				427	
02:30	12		15				27		14:30	265		227				492	
02:45	9	49	10	53			19	102	14:45	273	969	225	887			498	1856
03:00	11		6				17		15:00	251		229				480	
03:15	10		14				24		15:15	255		250				505	
03:30	29		16				45		15:30	296		259				555	
03:45	12	62	14	50			26	112	15:45	243	1045	288	1026			531	2071
04:00	13		13				26		16:00	228		258				486	
04:15	18		17				35		16:15	229		295				524	
04:30	30		27				57		16:30	284		241				525	
04:45	29	90	29	86			58	176	16:45	273	1014	278	1072			551	2086
05:00	37		46				83		17:00	291		292				583	
05:15	55		44				99		17:15	278		289				567	
05:30	75		45				120		17:30	268		274				542	
05:45	81	248	71	206			152	454	17:45	253	1090	261	1116			514	2206
06:00	86		88				174		18:00	272		244				516	
06:15	89		141				230		18:15	263		286				549	
06:30	115		104				219		18:30	247		240				487	
06:45	161	451	187	520			348	971	18:45	204	986	264	1034			468	2020
07:00	168		189				357		19:00	202		243				445	
07:15	222		225				447		19:15	188		205				393	
07:30	265		222				487		19:30	195		199				394	
07:45	224	879	283	919			507	1798	19:45	195	780	223	870			418	1650
08:00	228		258				486		20:00	201		195				396	
08:15	210		244				454		20:15	144		189				333	
08:30	210		199				409		20:30	180		195				375	
08:45	203	851	189	890			392	1741	20:45	160	685	199	778			359	1463
09:00	209		167				376		21:00	169		173				342	
09:15	148		185				333		21:15	134		183				317	
09:30	204		172				376		21:30	142		168				310	
09:45	192	753	191	715			383	1468	21:45	137	582	188	712			325	1294
10:00	177		177				354		22:00	127		161				288	
10:15	214		182				396		22:15	115		120				235	
10:30	219		173				392		22:30	86		118				204	
10:45	204	814	183	715			387	1529	22:45	97	425	103	502			200	927
11:00	189		243				432		23:00	63		99				162	
11:15	224		214				438		23:15	75		79				154	
11:30	215		209				424		23:30	57		79				136	
11:45	225	853	206	872			431	1725	23:45	37	232	54	311			91	543
TOTALS		5245		5248				10493	TOTALS		9686		10102				19788
SPLIT %		50.0%		50.0%				34.7%	SPLIT %		48.9%		51.1%				65.3%

DAILY TOTALS	NB	SB	EB	WB	Total
	14,931	15,350	0	0	30,281

AM Peak Hour	07:15	07:30	07:30	PM Peak Hour	16:30	16:45	16:45
AM Pk Volume	939	1007	1934	PM Pk Volume	1126	1133	2243
Pk Hr Factor	0.886	0.890	0.954	Pk Hr Factor	0.967	0.970	0.962
7 - 9 Volume	1730	1809	3539	4 - 6 Volume	2104	2188	4292
7 - 9 Peak Hour	07:15	07:30	07:30	4 - 6 Peak Hour	16:30	16:45	16:45
7 - 9 Pk Volume	939	1007	1934	4 - 6 Pk Volume	1126	1133	2243
Pk Hr Factor	0.886	0.890	0.954	Pk Hr Factor	0.967	0.970	0.962

Prepared by NDS/ATD

VOLUME

Cantara St between Reseda Blvd & Etiwanda Ave

Day: Wednesday
Date: 8/28/2013

City: Los Angeles
Project #: CA13_5440_006

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,204	1,130	2,334

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			5		1		6		12:00			10		12		22	
00:15			2		1		3		12:15			14		7		21	
00:30			3		3		6		12:30			14		13		27	
00:45			5	15	4	9	9	24	12:45			12	50	9	41	21	91
01:00			0		2		2		13:00			25		11		36	
01:15			2		3		5		13:15			15		20		35	
01:30			1		4		5		13:30			12		19		31	
01:45			0	3	1	10	1	13	13:45			16	68	14	64	30	132
02:00			2		3		5		14:00			11		20		31	
02:15			0		2		2		14:15			19		10		29	
02:30			4		3		7		14:30			22		25		47	
02:45			1	7	2	10	3	17	14:45			26	78	11	66	37	144
03:00			1		1		2		15:00			20		18		38	
03:15			1		0		1		15:15			20		14		34	
03:30			0		6		6		15:30			28		17		45	
03:45			1	3	1	8	2	11	15:45			26	94	17	66	43	160
04:00			1		0		1		16:00			19		15		34	
04:15			3		3		6		16:15			23		19		42	
04:30			2		3		5		16:30			21		15		36	
04:45			5	11	1	7	6	18	16:45			22	85	23	72	45	157
05:00			4		1		5		17:00			34		25		59	
05:15			6		5		11		17:15			28		24		52	
05:30			9		4		13		17:30			30		14		44	
05:45			11	30	7	17	18	47	17:45			23	115	17	80	40	195
06:00			9		9		18		18:00			22		11		33	
06:15			20		11		31		18:15			17		16		33	
06:30			14		10		24		18:30			24		15		39	
06:45			8	51	14	44	22	95	18:45			18	81	15	57	33	138
07:00			18		15		33		19:00			11		18		29	
07:15			26		22		48		19:15			9		14		23	
07:30			21		25		46		19:30			15		14		29	
07:45			40	105	32	94	72	199	19:45			12	47	7	53	19	100
08:00			21		30		51		20:00			13		16		29	
08:15			19		16		35		20:15			7		12		19	
08:30			20		27		47		20:30			10		9		19	
08:45			10	70	15	88	25	158	20:45			13	43	15	52	28	95
09:00			12		9		21		21:00			12		14		26	
09:15			18		24		42		21:15			11		15		26	
09:30			11		17		28		21:30			9		8		17	
09:45			17	58	14	64	31	122	21:45			7	39	5	42	12	81
10:00			18		12		30		22:00			5		4		9	
10:15			14		21		35		22:15			5		10		15	
10:30			11		17		28		22:30			8		12		20	
10:45			9	52	20	70	29	122	22:45			10	28	8	34	18	62
11:00			10		14		24		23:00			6		13		19	
11:15			7		12		19		23:15			7		9		16	
11:30			17		9		26		23:30			6		9		15	
11:45			18	52	12	47	30	99	23:45			0	19	4	35	4	54
TOTALS				457		468		925	TOTALS				747		662		1409
SPLIT %				49.4%		50.6%		39.6%	SPLIT %				53.0%		47.0%		60.4%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,204	1,130	2,334

AM Peak Hour	07:15	07:15	07:15	PM Peak Hour	17:00	16:30	16:45
AM Pk Volume	108	109	217	PM Pk Volume	115	87	200
Pk Hr Factor	0.675	0.852	0.753	Pk Hr Factor	0.846	0.870	0.847
7 - 9 Volume	175	182	357	4 - 6 Volume	200	152	352
7 - 9 Peak Hour	07:15	07:15	07:15	4 - 6 Peak Hour	17:00	16:30	16:45
7 - 9 Pk Volume	108	109	217	4 - 6 Pk Volume	115	87	200
Pk Hr Factor	0.675	0.852	0.753	Pk Hr Factor	0.846	0.870	0.847

Prepared by NDS/ATD

VOLUME

Etiwanda Ave between Roscoe Blvd Cantara St

Day: Wednesday
Date: 8/28/2013

City: Los Angeles
Project #: CA13_5440_004

DAILY TOTALS	NB	SB	EB	WB	Total
	2,780	2,459	0	0	5,239

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	10		9				19		12:00	32		46				78	
00:15	4		4				8		12:15	46		38				84	
00:30	6		4				10		12:30	41		29				70	
00:45	2	22	3	20			5	42	12:45	29	148	37	150			66	298
01:00	2		4				6		13:00	31		23				54	
01:15	1		2				3		13:15	39		34				73	
01:30	2		6				8		13:30	37		39				76	
01:45	2	7	6	18			8	25	13:45	48	155	42	138			90	293
02:00	1		3				4		14:00	30		34				64	
02:15	0		3				3		14:15	39		34				73	
02:30	5		2				7		14:30	46		61				107	
02:45	1	7	0	8			1	15	14:45	41	156	43	172			84	328
03:00	4		2				6		15:00	46		39				85	
03:15	1		4				5		15:15	51		56				107	
03:30	0		3				3		15:30	62		47				109	
03:45	3	8	0	9			3	17	15:45	43	202	40	182			83	384
04:00	2		1				3		16:00	56		50				106	
04:15	0		0				0		16:15	48		43				91	
04:30	8		1				9		16:30	46		44				90	
04:45	5	15	9	11			14	26	16:45	73	223	58	195			131	418
05:00	8		2				10		17:00	66		62				128	
05:15	14		8				22		17:15	59		53				112	
05:30	10		3				13		17:30	61		40				101	
05:45	14	46	6	19			20	65	17:45	47	233	47	202			94	435
06:00	12		12				24		18:00	33		44				77	
06:15	22		14				36		18:15	54		41				95	
06:30	32		10				42		18:30	43		45				88	
06:45	32	98	16	52			48	150	18:45	55	185	35	165			90	350
07:00	31		17				48		19:00	26		34				60	
07:15	54		37				91		19:15	40		37				77	
07:30	92		49				141		19:30	32		36				68	
07:45	111	288	60	163			171	451	19:45	32	130	35	142			67	272
08:00	74		42				116		20:00	26		30				56	
08:15	59		33				92		20:15	31		31				62	
08:30	42		37				79		20:30	29		28				57	
08:45	50	225	33	145			83	370	20:45	16	102	19	108			35	210
09:00	32		26				58		21:00	23		13				36	
09:15	34		26				60		21:15	17		26				43	
09:30	23		23				46		21:30	24		18				42	
09:45	33	122	41	116			74	238	21:45	17	81	16	73			33	154
10:00	34		28				62		22:00	14		15				29	
10:15	27		33				60		22:15	10		17				27	
10:30	26		45				71		22:30	15		8				23	
10:45	32	119	28	134			60	253	22:45	8	47	12	52			20	99
11:00	21		44				65		23:00	8		11				19	
11:15	38		24				62		23:15	8		14				22	
11:30	35		39				74		23:30	11		8				19	
11:45	37	131	34	141			71	272	23:45	3	30	11	44			14	74
TOTALS		1088		836				1924	TOTALS		1692		1623				3315
SPLIT %		56.5%		43.5%				36.7%	SPLIT %		51.0%		49.0%				63.3%

DAILY TOTALS	NB	SB	EB	WB	Total
	2,780	2,459	0	0	5,239

AM Peak Hour	07:30	07:15	07:30	PM Peak Hour	16:45	16:30	16:45
AM Pk Volume	336	188	520	PM Pk Volume	259	217	472
Pk Hr Factor	0.757	0.783	0.760	Pk Hr Factor	0.887	0.875	0.901
7 - 9 Volume	513	308	821	4 - 6 Volume	456	397	853
7 - 9 Peak Hour	07:30	07:15	07:30	4 - 6 Peak Hour	16:45	16:30	16:45
7 - 9 Pk Volume	336	188	520	4 - 6 Pk Volume	259	217	472
Pk Hr Factor	0.757	0.783	0.760	Pk Hr Factor	0.887	0.875	0.901

Prepared by NDS/ATD

VOLUME

Etiwanda Ave between Cantara St & Strathern St

Day: Wednesday
Date: 8/28/2013

City: Los Angeles
Project #: CA13_5440_005

DAILY TOTALS	NB	SB	EB	WB	Total
	1,528	1,567	0	0	3,095

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	1		4				5		12:00	20		29				49	
00:15	1		3				4		12:15	20		28				48	
00:30	3		2				5		12:30	18		14				32	
00:45	3	8	1	10			4	18	12:45	13	71	21	92			34	163
01:00	0		1				1		13:00	10		19				29	
01:15	1		0				1		13:15	21		17				38	
01:30	0		1				1		13:30	28		29				57	
01:45	0	1	0	2			0	3	13:45	14	73	31	96			45	169
02:00	0		3				3		14:00	21		21				42	
02:15	0		1				1		14:15	36		28				64	
02:30	0		3				3		14:30	31		40				71	
02:45	0		1	8			1	8	14:45	28	116	30	119			58	235
03:00	1		0				1		15:00	21		30				51	
03:15	1		2				3		15:15	29		36				65	
03:30	0		1				1		15:30	23		34				57	
03:45	2	4	0	3			2	7	15:45	27	100	33	133			60	233
04:00	0		1				1		16:00	26		21				47	
04:15	3		0				3		16:15	29		33				62	
04:30	1		0				1		16:30	23		34				57	
04:45	3	7	2	3			5	10	16:45	29	107	34	122			63	229
05:00	4		5				9		17:00	31		45				76	
05:15	4		2				6		17:15	27		27				54	
05:30	6		2				8		17:30	37		31				68	
05:45	1	15	2	11			3	26	17:45	28	123	41	144			69	267
06:00	8		5				13		18:00	34		33				67	
06:15	22		7				29		18:15	22		29				51	
06:30	9		5				14		18:30	25		33				58	
06:45	24	63	7	24			31	87	18:45	24	105	28	123			52	228
07:00	23		9				32		19:00	20		23				43	
07:15	25		27				52		19:15	21		26				47	
07:30	43		37				80		19:30	20		24				44	
07:45	71	162	35	108			106	270	19:45	14	75	13	86			27	161
08:00	45		29				74		20:00	11		20				31	
08:15	23		24				47		20:15	18		20				38	
08:30	22		21				43		20:30	14		15				29	
08:45	16	106	14	88			30	194	20:45	15	58	11	66			26	124
09:00	21		20				41		21:00	10		15				25	
09:15	27		12				39		21:15	5		13				18	
09:30	22		12				34		21:30	7		11				18	
09:45	18	88	16	60			34	148	21:45	11	33	10	49			21	82
10:00	17		20				37		22:00	5		8				13	
10:15	21		19				40		22:15	9		10				19	
10:30	23		18				41		22:30	8		9				17	
10:45	22	83	20	77			42	160	22:45	4	26	4	31			8	57
11:00	26		25				51		23:00	2		7				9	
11:15	24		13				37		23:15	2		7				9	
11:30	21		25				46		23:30	3		2				5	
11:45	22	93	24	87			46	180	23:45	4	11	9	25			13	36
TOTALS		630		481				1111	TOTALS		898		1086				1984
SPLIT %		56.7%		43.3%				35.9%	SPLIT %		45.3%		54.7%				64.1%

DAILY TOTALS	NB	SB	EB	WB	Total
	1,528	1,567	0	0	3,095

AM Peak Hour	07:15	07:15	07:15	PM Peak Hour	17:15	16:15	17:00
AM Pk Volume	184	128	312	PM Pk Volume	126	146	267
Pk Hr Factor	0.648	0.865	0.736	Pk Hr Factor	0.851	0.811	0.878
7 - 9 Volume	268	196	464	4 - 6 Volume	230	266	496
7 - 9 Peak Hour	07:15	07:15	07:15	4 - 6 Peak Hour	16:45	16:15	17:00
7 - 9 Pk Volume	184	128	312	4 - 6 Pk Volume	124	146	267
Pk Hr Factor	0.648	0.865	0.736	Pk Hr Factor	0.838	0.811	0.878

Prepared by NDS/ATD

VOLUME

Strathern St between Reseda Blvd & Etiwanda Ave

Day: Wednesday
Date: 8/28/2013

City: Los Angeles
Project #: CA13_5440_007

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,504	1,400	2,904

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			0		4		4		12:00			10		16		26	
00:15			0		3		3		12:15			17		17		34	
00:30			0		3		3		12:30			11		16		27	
00:45			2	2	0	10	2	12	12:45			20	58	13	62	33	120
01:00			5		4		9		13:00			21		16		37	
01:15			3		1		4		13:15			14		10		24	
01:30			0		1		1		13:30			16		18		34	
01:45			2	10	0	6	2	16	13:45			17	68	19	63	36	131
02:00			0		1		1		14:00			20		15		35	
02:15			1		1		2		14:15			30		20		50	
02:30			5		1		6		14:30			21		32		53	
02:45			0	6	2	5	2	11	14:45			25	96	19	86	44	182
03:00			0		0		0		15:00			27		35		62	
03:15			2		2		4		15:15			58		37		95	
03:30			1		0		1		15:30			31		33		64	
03:45			1	4	0	2	1	6	15:45			30	146	28	133	58	279
04:00			1		0		1		16:00			18		28		46	
04:15			0		0		0		16:15			24		30		54	
04:30			1		1		2		16:30			25		30		55	
04:45			2	4	1	2	3	6	16:45			25	92	23	111	48	203
05:00			1		3		4		17:00			36		27		63	
05:15			5		1		6		17:15			35		18		53	
05:30			9		4		13		17:30			27		34		61	
05:45			3	18	5	13	8	31	17:45			29	127	32	111	61	238
06:00			13		6		19		18:00			35		32		67	
06:15			8		3		11		18:15			25		17		42	
06:30			11		12		23		18:30			35		22		57	
06:45			19	51	15	36	34	87	18:45			29	124	24	95	53	219
07:00			26		26		52		19:00			24		20		44	
07:15			41		43		84		19:15			20		22		42	
07:30			54		59		113		19:30			18		16		34	
07:45			72	193	54	182	126	375	19:45			21	83	19	77	40	160
08:00			34		39		73		20:00			21		18		39	
08:15			28		21		49		20:15			10		11		21	
08:30			21		17		38		20:30			11		17		28	
08:45			12	95	17	94	29	189	20:45			16	58	17	63	33	121
09:00			16		10		26		21:00			15		18		33	
09:15			13		11		24		21:15			17		16		33	
09:30			8		5		13		21:30			15		10		25	
09:45			18	55	16	42	34	97	21:45			14	61	13	57	27	118
10:00			11		8		19		22:00			7		9		16	
10:15			15		12		27		22:15			11		10		21	
10:30			12		9		21		22:30			4		8		12	
10:45			11	49	13	42	24	91	22:45			13	35	11	38	24	73
11:00			9		9		18		23:00			7		9		16	
11:15			10		12		22		23:15			6		9		15	
11:30			16		14		30		23:30			2		2		4	
11:45			12	47	12	47	24	94	23:45			7	22	3	23	10	45
TOTALS				534		481		1015	TOTALS				970		919		1889
SPLIT %				52.6%		47.4%		35.0%	SPLIT %				51.3%		48.7%		65.0%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,504	1,400	2,904

AM Peak Hour	07:15	07:15	07:15	PM Peak Hour	15:00	15:00	15:00
AM Pk Volume	201	195	396	PM Pk Volume	146	133	279
Pk Hr Factor	0.698	0.826	0.786	Pk Hr Factor	0.629	0.899	0.734
7 - 9 Volume	288	276	564	4 - 6 Volume	219	222	441
7 - 9 Peak Hour	07:15	07:15	07:15	4 - 6 Peak Hour	17:00	16:00	17:00
7 - 9 Pk Volume	201	195	396	4 - 6 Pk Volume	127	111	238
Pk Hr Factor	0.698	0.826	0.786	Pk Hr Factor	0.882	0.925	0.944

APPENDIX B
LOS Operations Worksheets – Existing Conditions

LADWP Reseda Pipeline
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #1 RESEDA BL & ROSCOE BL

Cycle (sec): 100 Critical Vol./Cap.(X): 0.929
Loss Time (sec): 0 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: E

Street Name:	RESEDA BL						ROSCOE BL					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 2	0 1	1	0 2	0 1	1	0 2	1 0	1	0 2	0 1
Volume Module:												
Base Vol:	114	709	132	142	792	147	211	1253	124	153	1112	147
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	709	132	142	792	147	211	1253	124	153	1112	147
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	114	709	132	142	792	147	211	1253	124	153	1112	147
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	114	709	132	142	792	147	211	1253	124	153	1112	147
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	114	709	132	142	792	147	211	1253	124	153	1112	147
Saturation Flow Module:												
Sat/Lane:	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.73	0.27	1.00	2.00	1.00
Final Sat.:	1375	2750	1375	1375	2750	1375	1375	3754	371	1375	2750	1375
Capacity Analysis Module:												
Vol/Sat:	0.08	0.26	0.10	0.10	0.29	0.11	0.15	0.33	0.33	0.11	0.40	0.11
Crit Volume:	114				396		211				556	
Crit Moves:	****				****		****				****	

LADWP Reseda Pipeline
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 RESEDA BL & CANTARA ST

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: D[28.9]

Street Name:	RESEDA BL									CANTARA ST					
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	T	R	L	T	R	L	T	R	L	T	R			
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign					
Rights:	Include			Include			Include			Include					
Lanes:	0	0 1	1 0	1	0 2	0 0	0	0 0	0 0	0	0 1!	0 0			
Volume Module:															
Base Vol:	0	879	46	58	1025	0	0	0	0	29	0	85			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	0	879	46	58	1025	0	0	0	0	29	0	85			
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Volume:	0	879	46	58	1025	0	0	0	0	29	0	85			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
FinalVolume:	0	879	46	58	1025	0	0	0	0	29	0	85			
Critical Gap Module:															
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	6.5	6.9			
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3			
Capacity Module:															
Cnflict Vol:	xxxx	xxxx	xxxxx	925	xxxx	xxxxx	xxxx	xxxx	xxxxx	1531	2043	463			
Potent Cap.:	xxxx	xxxx	xxxxx	747	xxxx	xxxxx	xxxx	xxxx	xxxxx	110	57	552			
Move Cap.:	xxxx	xxxx	xxxxx	747	xxxx	xxxxx	xxxx	xxxx	xxxxx	103	53	552			
Volume/Cap:	xxxx	xxxx	xxxx	0.08	xxxx	xxxx	xxxx	xxxx	xxxx	0.28	0.00	0.15			
Level Of Service Module:															
2Way95thQ:	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx			
Control Del:	xxxxx	xxxx	xxxxx	10.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
LOS by Move:	*	*	*	B	*	*	*	*	*	*	*	*			
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	262	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	2.1	xxxxx			
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	28.9	xxxxx			
Shared LOS:	*	*	*	*	*	*	*	*	*	*	D	*			
ApproachDel:	xxxxxx			xxxxxx			xxxxxx				28.9				
ApproachLOS:	*			*			*				D				

Note: Queue reported is the number of cars per lane.

LADWP Reseda Pipeline
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #3 RESEDA BL & STRATHERN ST

Cycle (sec):	100	Critical Vol./Cap.(X):	0.578
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	A

Street Name:	RESEDA BL						STRATHERN ST					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	1 0	1	0 1	1 0	0	0 1!	0 0	0	0 1!	0 0
Volume Module:												
Base Vol:	41	860	27	30	1003	38	57	109	57	74	142	33
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	860	27	30	1003	38	57	109	57	74	142	33
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	41	860	27	30	1003	38	57	109	57	74	142	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	41	860	27	30	1003	38	57	109	57	74	142	33
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	41	860	27	30	1003	38	57	109	57	74	142	33
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.94	0.06	1.00	1.93	0.07	0.25	0.49	0.26	0.30	0.57	0.13
Final Sat.:	1500	2909	91	1500	2890	110	383	733	383	446	855	199
Capacity Analysis Module:												
Vol/Sat:	0.03	0.30	0.30	0.02	0.35	0.35	0.15	0.15	0.15	0.17	0.17	0.17
Crit Volume:	41				521		57					249
Crit Moves:	****				****		****					****

LADWP Reseda Pipeline
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #4 ETIWANDA AVE & ROSCOE BL

Cycle (sec):	100	Critical Vol./Cap.(X):	0.710
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	50	Level Of Service:	C

Street Name:	ETIWANDA AVE						ROSCOE BL					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 1!	0 0	0	0 1!	0 0	1	0 2	1 0	1	0 2	0 1
Volume Module:												
Base Vol:	81	107	104	106	95	79	34	1286	81	107	1265	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	81	107	104	106	95	79	34	1286	81	107	1265	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	81	107	104	106	95	79	34	1286	81	107	1265	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	81	107	104	106	95	79	34	1286	81	107	1265	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	81	107	104	106	95	79	34	1286	81	107	1265	55
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.28	0.37	0.35	0.38	0.34	0.28	1.00	2.82	0.18	1.00	2.00	1.00
Final Sat.:	416	550	534	568	509	423	1500	4233	267	1500	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.19	0.19	0.19	0.19	0.19	0.19	0.02	0.30	0.30	0.07	0.42	0.04
Crit Volume:		292			106			34			633	
Crit Moves:		****			****			****			****	

LADWP Reseda Pipeline
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #5 ETIWANDA AVE & STRATHERN ST

Cycle (sec):	100	Critical Vol./Cap.(X):	0.336
Loss Time (sec):	0	Average Delay (sec/veh):	10.1
Optimal Cycle:	0	Level Of Service:	B

Street Name:	ETIWANDA AVE						STRATHERN ST					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	27	156	42	24	132	26	26	142	21	22	146	31
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	156	42	24	132	26	26	142	21	22	146	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	27	156	42	24	132	26	26	142	21	22	146	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	156	42	24	132	26	26	142	21	22	146	31
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	27	156	42	24	132	26	26	142	21	22	146	31
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.12	0.69	0.19	0.13	0.73	0.14	0.14	0.75	0.11	0.11	0.73	0.16
Final Sat.:	80	464	125	86	474	93	90	489	72	73	482	102
Capacity Analysis Module:												
Vol/Sat:	0.34	0.34	0.34	0.28	0.28	0.28	0.29	0.29	0.29	0.30	0.30	0.30
Crit Moves:	****				****				****		****	
Delay/Veh:	10.3	10.3	10.3	9.9	9.9	9.9	10.1	10.1	10.1	10.1	10.1	10.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.3	10.3	10.3	9.9	9.9	9.9	10.1	10.1	10.1	10.1	10.1	10.1
LOS by Move:	B	B	B	A	A	A	B	B	B	B	B	B
ApproachDel:		10.3			9.9			10.1			10.1	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		10.3			9.9			10.1			10.1	
LOS by Appr:		B			A			B			B	
AllWayAvgQ:	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4

Note: Queue reported is the number of cars per lane.

LADWP Reseda Pipeline
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #1 RESEDA BL & ROSCOE BL

Cycle (sec):	100	Critical Vol./Cap.(X):	0.896
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	D

Street Name:	RESEDA BL						ROSCOE BL					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 2	0 1	1	0 2	0 1	1	0 2	1 0	1	0 2	1 0
Volume Module:												
Base Vol:	143	837	153	190	917	179	211	1276	128	109	1012	224
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	143	837	153	190	917	179	211	1276	128	109	1012	224
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	143	837	153	190	917	179	211	1276	128	109	1012	224
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	143	837	153	190	917	179	211	1276	128	109	1012	224
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	143	837	153	190	917	179	211	1276	128	109	1012	224
Saturation Flow Module:												
Sat/Lane:	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.73	0.27	1.00	2.46	0.54
Final Sat.:	1375	2750	1375	1375	2750	1375	1375	3749	376	1375	3377	748
Capacity Analysis Module:												
Vol/Sat:	0.10	0.30	0.11	0.14	0.33	0.13	0.15	0.34	0.34	0.08	0.30	0.30
Crit Volume:		418			190			211			412	
Crit Moves:		****			****			****			****	

LADWP Reseda Pipeline
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 RESEDA BL & CANTARA ST

Average Delay (sec/veh): 1.5 Worst Case Level Of Service: D[32.4]

Street Name:	RESEDA BL									CANTARA ST					
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	-	T - R	L	-	T - R	L	-	T - R	L	-	T - R			
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign					
Rights:	Include			Include			Include			Include					
Lanes:	0	0 1	1 0	1	0 2	0 0	0	0 0	0 0	0	0 1!	0 0			
Volume Module:															
Base Vol:	0	1038	49	80	1119	0	0	0	0	17	0	61			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	0	1038	49	80	1119	0	0	0	0	17	0	61			
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Volume:	0	1038	49	80	1119	0	0	0	0	17	0	61			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
FinalVolume:	0	1038	49	80	1119	0	0	0	0	17	0	61			
Critical Gap Module:															
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	6.5	6.9			
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3			
Capacity Module:															
Cnflict Vol:	xxxx	xxxx	xxxxx	1087	xxxx	xxxxx	xxxx	xxxx	xxxxx	1782	2342	544			
Potent Cap.:	xxxx	xxxx	xxxxx	649	xxxx	xxxxx	xxxx	xxxx	xxxxx	75	37	489			
Move Cap.:	xxxx	xxxx	xxxxx	649	xxxx	xxxxx	xxxx	xxxx	xxxxx	68	32	489			
Volume/Cap:	xxxx	xxxx	xxxx	0.12	xxxx	xxxx	xxxx	xxxx	xxxx	0.25	0.00	0.12			
Level Of Service Module:															
2Way95thQ:	xxxx	xxxx	xxxxx	0.4	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx			
Control Del:	xxxxx	xxxx	xxxxx	11.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
LOS by Move:	*	*	*	B	*	*	*	*	*	*	*	*			
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	207	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	1.6	xxxxx			
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	32.4	xxxxx			
Shared LOS:	*	*	*	*	*	*	*	*	*	*	D	*			
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			32.4					
ApproachLOS:	*			*			*			D					

Note: Queue reported is the number of cars per lane.

LADWP Reseda Pipeline
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #3 RESEDA BL & STRATHERN ST

Cycle (sec):	100	Critical Vol./Cap.(X):	0.513
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	A

Street Name:	RESEDA BL									STRATHERN ST					
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	T	R	L	T	R	L	T	R	L	T	R			
Control:	Permitted			Permitted			Permitted			Permitted					
Rights:	Include			Include			Include			Include					
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0			
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lanes:	1	0	1	1	0	1	0	1	1	0	0	0	1!	0	0	0	0	1!	0	0
Volume Module:															
Base Vol:	37	998	49	43	1045	50	34	65	51	35	43	33			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	37	998	49	43	1045	50	34	65	51	35	43	33			
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Volume:	37	998	49	43	1045	50	34	65	51	35	43	33			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
Reduced Vol:	37	998	49	43	1045	50	34	65	51	35	43	33			
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
FinalVolume:	37	998	49	43	1045	50	34	65	51	35	43	33			
Saturation Flow Module:															
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500			
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Lanes:	1.00	1.91	0.09	1.00	1.91	0.09	0.23	0.43	0.34	0.31	0.39	0.30			
Final Sat.:	1500	2860	140	1500	2863	137	340	650	510	473	581	446			
Capacity Analysis Module:															
Vol/Sat:	0.02	0.35	0.35	0.03	0.36	0.37	0.10	0.10	0.10	0.07	0.07	0.07			
Crit Volume:	37					548		150		35					
Crit Moves:	****					****		****		****					

LADWP Reseda Pipeline
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #4 ETIWANDA AVE & ROSCOE BL

Cycle (sec):	100	Critical Vol./Cap.(X):	0.634
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	39	Level Of Service:	B

Street Name:	ETIWANDA AVE									ROSCOE BL					
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	T	R	L	T	R	L	T	R	L	T	R			
Control:	Permitted			Permitted			Permitted			Permitted					
Rights:	Include			Include			Include			Include					
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0			
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lanes:	0	0	1!	0	0	0	0	1!	0	0	1	0	2	1	0	1	0	2	1	0
Volume Module:															
Base Vol:	100	83	123	41	47	37	60	1483	106	75	1185	25			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	100	83	123	41	47	37	60	1483	106	75	1185	25			
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Volume:	100	83	123	41	47	37	60	1483	106	75	1185	25			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
Reduced Vol:	100	83	123	41	47	37	60	1483	106	75	1185	25			
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
FinalVolume:	100	83	123	41	47	37	60	1483	106	75	1185	25			
Saturation Flow Module:															
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500			
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Lanes:	0.33	0.27	0.40	0.33	0.38	0.29	1.00	2.80	0.20	1.00	2.94	0.06			
Final Sat.:	490	407	603	492	564	444	1500	4200	300	1500	4407	93			
Capacity Analysis Module:															
Vol/Sat:	0.20	0.20	0.20	0.08	0.08	0.08	0.04	0.35	0.35	0.05	0.27	0.27			
Crit Volume:			306	41				530		75					
Crit Moves:			****	****				****		****					

LADWP Reseda Pipeline
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #5 ETIWANDA AVE & STRATHERN ST

Cycle (sec):	100	Critical Vol./Cap.(X):	0.228
Loss Time (sec):	0	Average Delay (sec/veh):	8.8
Optimal Cycle:	0	Level Of Service:	A

Street Name:	ETIWANDA AVE						STRATHERN ST					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	22	122	26	16	130	20	14	83	26	19	84	17
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	22	122	26	16	130	20	14	83	26	19	84	17
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	22	122	26	16	130	20	14	83	26	19	84	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	22	122	26	16	130	20	14	83	26	19	84	17
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	22	122	26	16	130	20	14	83	26	19	84	17
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.13	0.72	0.15	0.10	0.78	0.12	0.11	0.68	0.21	0.16	0.70	0.14
Final Sat.:	96	535	114	72	582	89	82	484	152	112	496	100
Capacity Analysis Module:												
Vol/Sat:	0.23	0.23	0.23	0.22	0.22	0.22	0.17	0.17	0.17	0.17	0.17	0.17
Crit Moves:		****			****			****			****	
Delay/Veh:	8.9	8.9	8.9	8.9	8.9	8.9	8.6	8.6	8.6	8.7	8.7	8.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.9	8.9	8.9	8.9	8.9	8.9	8.6	8.6	8.6	8.7	8.7	8.7
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		8.9			8.9			8.6			8.7	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.9			8.9			8.6			8.7	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2

Note: Queue reported is the number of cars per lane.

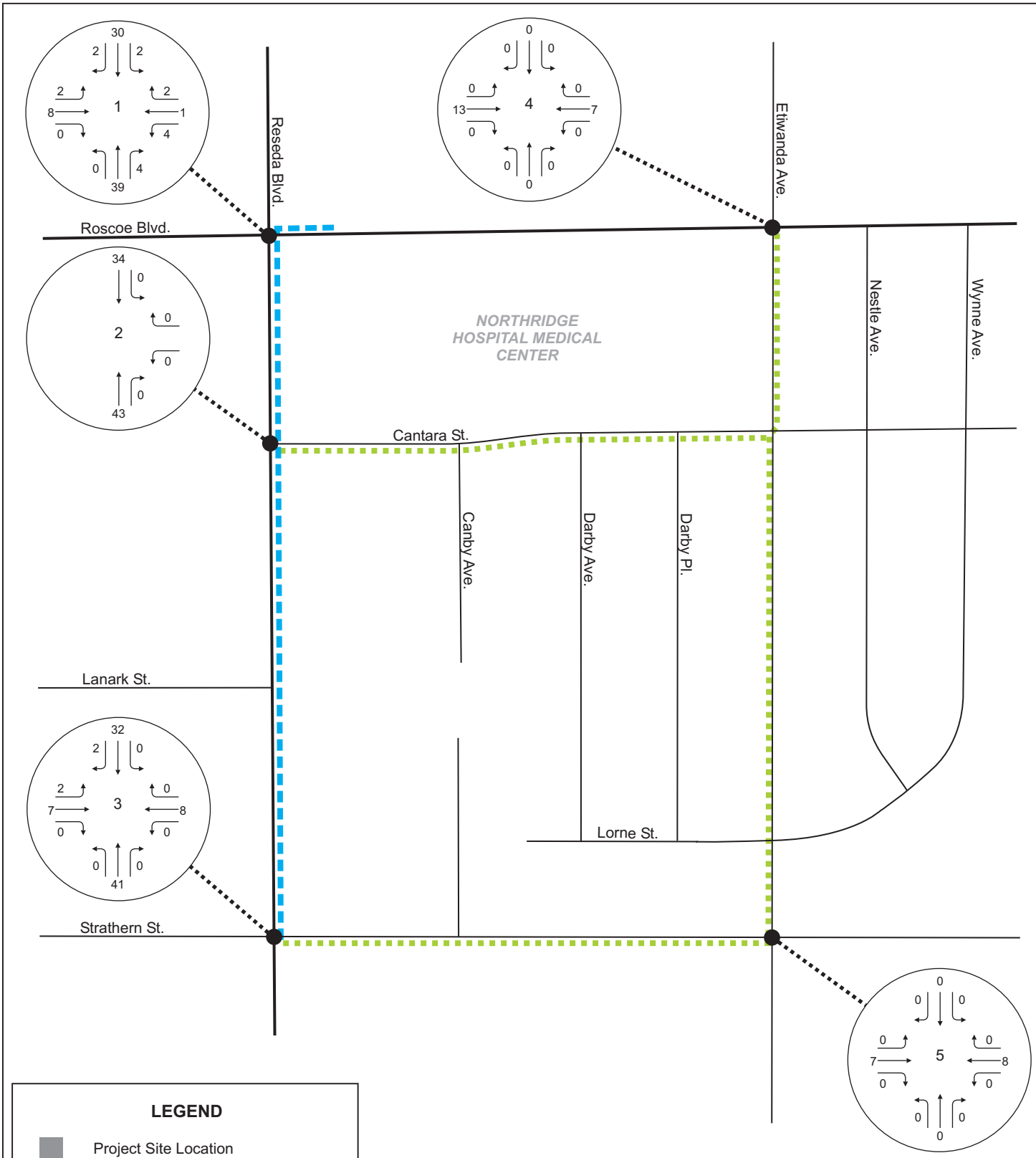
APPENDIX C
Related Projects List and Trip Assignment

JB31094

LADWP Reseda Pipeline

Related Projects - Trip Generation

	Project Name	Location	Land use	Size	Units	Daily Total	AM Peak			PM Peak		
							In	Out	Total	In	Out	Total
1	Apartments & Retail	19401 Parthenia St	Mixed-Use	392 15.400	D.U. K.S.F.	3,243	28	155	183	135	61	196
2	LAUSD VR Blythe School	18730 Blythe St	School	250	seats	323	78	70	148	32	39	71
3	Reseda Residential	7251 Amigo Ave	Apartments	200	D.U.	1,134	16	59	75	60	31	91
4	9010 Reseda	9010 Reseda Blvd	Retail	7.800	K.S.F.	664	69	69	138	18	13	31

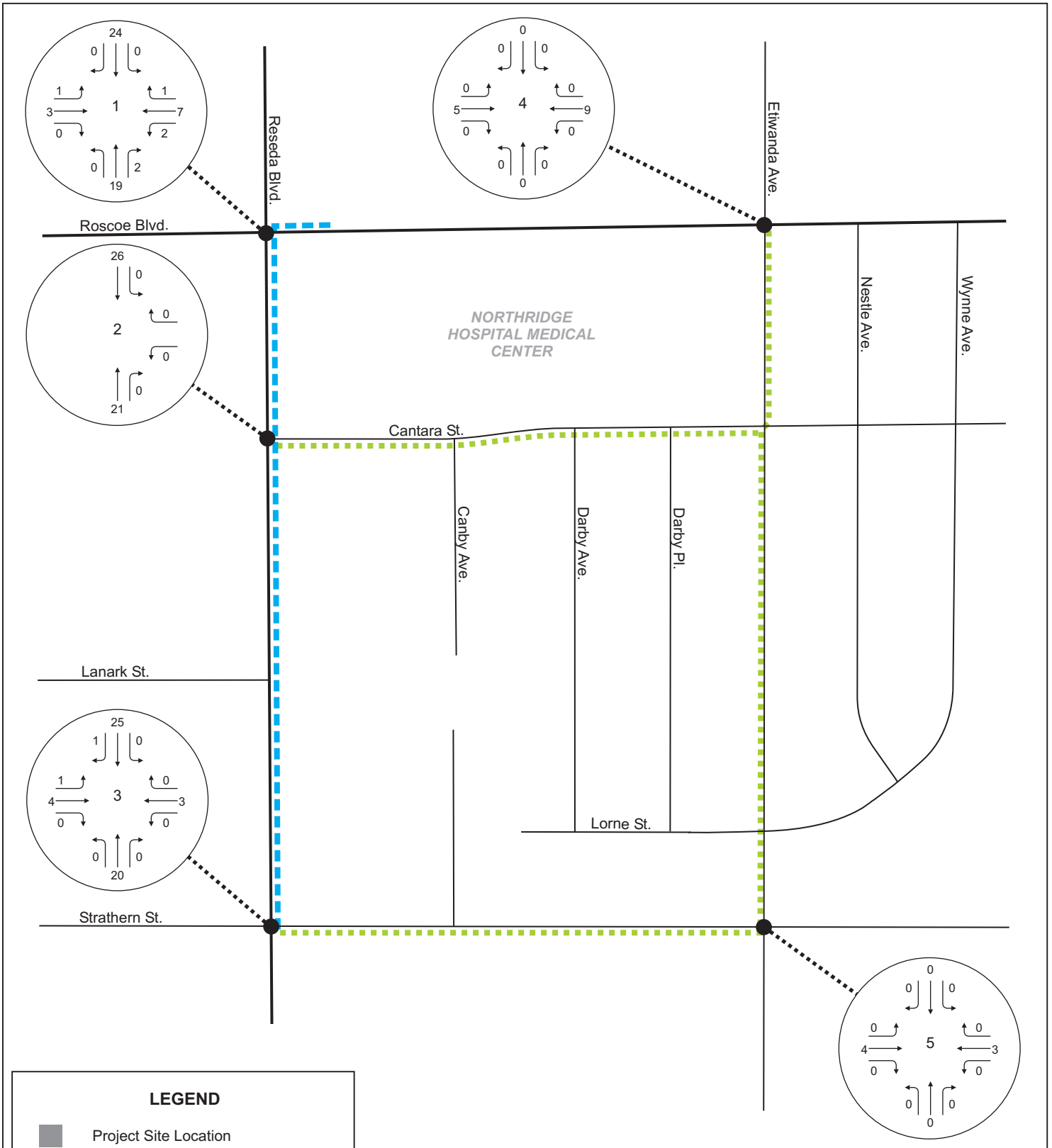


KOA CORPORATION
PLANNING & ENGINEERING

Reseda Pipeline Project

Appendix C -1

Related Project Trip Assignment - AM Peak Hour



KOA CORPORATION
PLANNING & ENGINEERING

Reseda Pipeline Project

Appendix C -2

Related Project Trip Assignment - PM Peak Hour

APPENDIX D
LOS Operations Worksheets – Future Without-Project Conditions

LADWP Reseda Pipeline
Future without Project
AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #1 RESEDA BL & ROSCOE BL

Cycle (sec):	100	Critical Vol./Cap.(X):	0.955
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	E

Street Name:	RESEDA BL						ROSCOE BL					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 2	0 1	1	0 2	0 1	1	0 2	1 0	1	0 2	0 1
Volume Module:												
Base Vol:	114	709	132	142	792	147	211	1253	124	153	1112	147
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	116	723	135	145	808	150	215	1278	126	156	1134	150
Added Vol:	0	39	4	2	30	2	2	8	0	4	1	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	116	762	139	147	838	152	217	1286	126	160	1135	152
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	116	762	139	147	838	152	217	1286	126	160	1135	152
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	116	762	139	147	838	152	217	1286	126	160	1135	152
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	116	762	139	147	838	152	217	1286	126	160	1135	152
Saturation Flow Module:												
Sat/Lane:	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.73	0.27	1.00	2.00	1.00
Final Sat.:	1375	2750	1375	1375	2750	1375	1375	3756	369	1375	2750	1375
Capacity Analysis Module:												
Vol/Sat:	0.08	0.28	0.10	0.11	0.30	0.11	0.16	0.34	0.34	0.12	0.41	0.11
Crit Volume:		381			147			217			568	
Crit Moves:		****			****			****			****	

LADWP Reseda Pipeline
Future without Project
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 RESEDA BL & CANTARA ST

Average Delay (sec/veh): 2.1 Worst Case Level Of Service: D[34.5]

Street Name:	RESEDA BL									CANTARA ST					
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	T	R	L	T	R	L	T	R	L	T	R			
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign					
Rights:	Include			Include			Include			Include					
Lanes:	0	0 1	1 0	1	0 2	0 0	0	0 0	0 0	0	0 1!	0 0			
Volume Module:															
Base Vol:	0	879	46	58	1025	0	0	0	0	29	0	85			
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02			
Initial Bse:	0	897	47	59	1046	0	0	0	0	30	0	87			
Added Vol:	0	43	0	0	34	0	0	0	0	0	0	0			
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0			
Initial Fut:	0	940	47	59	1080	0	0	0	0	30	0	87			
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Volume:	0	940	47	59	1080	0	0	0	0	30	0	87			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
FinalVolume:	0	940	47	59	1080	0	0	0	0	30	0	87			
Critical Gap Module:															
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	6.5	6.9			
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3			
Capacity Module:															
Cnflict Vol:	xxxx	xxxx	xxxxx	987	xxxx	xxxxx	xxxx	xxxx	xxxxx	1621	2161	493			
Potent Cap.:	xxxx	xxxx	xxxxx	708	xxxx	xxxxx	xxxx	xxxx	xxxxx	96	48	527			
Move Cap.:	xxxx	xxxx	xxxxx	708	xxxx	xxxxx	xxxx	xxxx	xxxxx	90	44	527			
Volume/Cap:	xxxx	xxxx	xxxx	0.08	xxxx	xxxx	xxxx	xxxx	xxxx	0.33	0.00	0.16			
Level Of Service Module:															
2Way95thQ:	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx			
Control Del:	xxxxx	xxxx	xxxxx	10.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
LOS by Move:	*	*	*	B	*	*	*	*	*	*	*	*			
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	235	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	2.5	xxxxx			
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	34.5	xxxxx			
Shared LOS:	*	*	*	*	*	*	*	*	*	*	D	*			
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			34.5					
ApproachLOS:	*			*			*			D					

Note: Queue reported is the number of cars per lane.

LADWP Reseda Pipeline
Future without Project
AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #3 RESEDA BL & STRATHERN ST

Cycle (sec):	100	Critical Vol./Cap.(X):	0.601
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	B

Street Name:	RESEDA BL						STRATHERN ST					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	1 0	1	0 1	1 0	0	0 1!	0 0	0	0 1!	0 0
Volume Module:												
Base Vol:	41	860	27	30	1003	38	57	109	57	74	142	33
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	42	877	28	31	1023	39	58	111	58	75	145	34
Added Vol:	0	41	0	0	32	2	2	7	0	0	8	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	42	918	28	31	1055	41	60	118	58	75	153	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	42	918	28	31	1055	41	60	118	58	75	153	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	918	28	31	1055	41	60	118	58	75	153	34
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	42	918	28	31	1055	41	60	118	58	75	153	34
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.94	0.06	1.00	1.93	0.07	0.25	0.50	0.25	0.29	0.58	0.13
Final Sat.:	1500	2913	87	1500	2888	112	382	750	369	432	875	193
Capacity Analysis Module:												
Vol/Sat:	0.03	0.32	0.32	0.02	0.37	0.37	0.16	0.16	0.16	0.17	0.17	0.17
Crit Volume:	42				548				236	75		
Crit Moves:	****				****				****	****		

LADWP Reseda Pipeline
Future without Project
AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #4 ETIWANDA AVE & ROSCOE BL

Cycle (sec):	100	Critical Vol./Cap.(X):	0.726
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	53	Level Of Service:	C

Street Name:	ETIWANDA AVE						ROSCOE BL					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	2	1 0	1 0	2	0 1
Volume Module:												
Base Vol:	81	107	104	106	95	79	34	1286	81	107	1265	55
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	83	109	106	108	97	81	35	1312	83	109	1290	56
Added Vol:	0	0	0	0	0	0	0	13	0	0	7	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	83	109	106	108	97	81	35	1325	83	109	1297	56
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	83	109	106	108	97	81	35	1325	83	109	1297	56
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	109	106	108	97	81	35	1325	83	109	1297	56
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	83	109	106	108	97	81	35	1325	83	109	1297	56
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.28	0.37	0.35	0.38	0.34	0.28	1.00	2.82	0.18	1.00	2.00	1.00
Final Sat.:	416	550	534	568	509	423	1500	4236	264	1500	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.20	0.20	0.20	0.19	0.19	0.19	0.02	0.31	0.31	0.07	0.43	0.04
Crit Volume:		298			108			35			649	
Crit Moves:		****			****			****			****	

LADWP Reseda Pipeline
Future without Project
AM Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #5 ETIWANDA AVE & STRATHERN ST

Cycle (sec):	100	Critical Vol./Cap.(X):	0.349
Loss Time (sec):	0	Average Delay (sec/veh):	10.4
Optimal Cycle:	0	Level Of Service:	B

Street Name:	ETIWANDA AVE						STRATHERN ST					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	27	156	42	24	132	26	26	142	21	22	146	31
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	28	159	43	24	135	27	27	145	21	22	149	32
Added Vol:	0	0	0	0	0	0	0	7	0	0	8	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	28	159	43	24	135	27	27	152	21	22	157	32
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	28	159	43	24	135	27	27	152	21	22	157	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	159	43	24	135	27	27	152	21	22	157	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	28	159	43	24	135	27	27	152	21	22	157	32
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.12	0.69	0.19	0.13	0.73	0.14	0.13	0.76	0.11	0.11	0.74	0.15
Final Sat.:	79	456	123	85	465	92	85	489	69	69	483	97
Capacity Analysis Module:												
Vol/Sat:	0.35	0.35	0.35	0.29	0.29	0.29	0.31	0.31	0.31	0.32	0.32	0.32
Crit Moves:		****		****			****				****	
Delay/Veh:	10.6	10.6	10.6	10.1	10.1	10.1	10.3	10.3	10.3	10.4	10.4	10.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.6	10.6	10.6	10.1	10.1	10.1	10.3	10.3	10.3	10.4	10.4	10.4
LOS by Move:	B	B	B	B	B	B	B	B	B	B	B	B
ApproachDel:		10.6			10.1			10.3			10.4	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		10.6			10.1			10.3			10.4	
LOS by Appr:		B			B			B			B	
AllWayAvgQ:	0.5	0.5	0.5	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4

LADWP Reseda Pipeline
Future without Project
AM Peak Hour

Note: Queue reported is the number of cars per lane.

LADWP Reseda Pipeline
Future without Project
PM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #1 RESEDA BL & ROSCOE BL

Cycle (sec): 100 Critical Vol./Cap.(X): 0.923
Loss Time (sec): 0 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: E

Street Name:	RESEDA BL						ROSCOE BL					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 2	0 1	1	0 2	0 1	1	0 2	1 0	1	0 2	1 0
Volume Module:												
Base Vol:	143	837	153	190	917	179	211	1276	128	109	1012	224
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	146	854	156	194	935	183	215	1302	131	111	1032	228
Added Vol:	0	19	2	0	24	0	1	3	0	2	7	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	146	873	158	194	959	183	216	1305	131	113	1039	229
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	146	873	158	194	959	183	216	1305	131	113	1039	229
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	146	873	158	194	959	183	216	1305	131	113	1039	229
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	146	873	158	194	959	183	216	1305	131	113	1039	229
Saturation Flow Module:												
Sat/Lane:	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.73	0.27	1.00	2.46	0.54
Final Sat.:	1375	2750	1375	1375	2750	1375	1375	3750	375	1375	3379	746
Capacity Analysis Module:												
Vol/Sat:	0.11	0.32	0.11	0.14	0.35	0.13	0.16	0.35	0.35	0.08	0.31	0.31
Crit Volume:		436		194			216					423
Crit Moves:		****		****			****					****

LADWP Reseda Pipeline
Future without Project
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 RESEDA BL & CANTARA ST

Average Delay (sec/veh): 1.6 Worst Case Level Of Service: E[36.9]

Street Name:	RESEDA BL									CANTARA ST					
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	T	R	L	T	R	L	T	R	L	T	R			
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign					
Rights:	Include			Include			Include			Include					
Lanes:	0	0 1	1 0	1	0 2	0 0	0	0 0	0 0	0	0 1!	0 0			
Volume Module:															
Base Vol:	0	1038	49	80	1119	0	0	0	0	17	0	61			
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02			
Initial Bse:	0	1059	50	82	1141	0	0	0	0	17	0	62			
Added Vol:	0	21	0	0	26	0	0	0	0	0	0	0			
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0			
Initial Fut:	0	1080	50	82	1167	0	0	0	0	17	0	62			
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Volume:	0	1080	50	82	1167	0	0	0	0	17	0	62			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
FinalVolume:	0	1080	50	82	1167	0	0	0	0	17	0	62			
Critical Gap Module:															
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	6.5	6.9			
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3			
Capacity Module:															
Cnflict Vol:	xxxx	xxxx	xxxxx	1130	xxxx	xxxxx	xxxx	xxxx	xxxxx	1852	2435	565			
Potent Cap.:	xxxx	xxxx	xxxxx	626	xxxx	xxxxx	xxxx	xxxx	xxxxx	67	32	473			
Move Cap.:	xxxx	xxxx	xxxxx	626	xxxx	xxxxx	xxxx	xxxx	xxxxx	60	28	473			
Volume/Cap:	xxxx	xxxx	xxxx	0.13	xxxx	xxxx	xxxx	xxxx	xxxx	0.29	0.00	0.13			
Level Of Service Module:															
2Way95thQ:	xxxx	xxxx	xxxxx	0.4	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx			
Control Del:	xxxxx	xxxx	xxxxx	11.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
LOS by Move:	*	*	*	B	*	*	*	*	*	*	*	*			
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	190	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	1.9	xxxxx			
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	36.9	xxxxx			
Shared LOS:	*	*	*	*	*	*	*	*	*	*	E	*			
ApproachDel:	xxxxxx			xxxxxx			xxxxxx				36.9				
ApproachLOS:	*			*			*				E				

Note: Queue reported is the number of cars per lane.

LADWP Reseda Pipeline
Future without Project
PM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #3 RESEDA BL & STRATHERN ST

Cycle (sec):	100	Critical Vol./Cap.(X):	0.535
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	31	Level Of Service:	A

Street Name:	RESEDA BL						STRATHERN ST					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	1 0	1	0 1	1 0	0	0 1!	0 0	0	0 1!	0 0
Volume Module:												
Base Vol:	37	998	49	43	1045	50	34	65	51	35	43	33
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	38	1018	50	44	1066	51	35	66	52	36	44	34
Added Vol:	0	20	0	0	25	1	1	4	0	0	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	38	1038	50	44	1091	52	36	70	52	36	47	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	38	1038	50	44	1091	52	36	70	52	36	47	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	38	1038	50	44	1091	52	36	70	52	36	47	34
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	38	1038	50	44	1091	52	36	70	52	36	47	34
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.91	0.09	1.00	1.91	0.09	0.23	0.44	0.33	0.31	0.40	0.29
Final Sat.:	1500	2862	138	1500	2864	136	339	667	494	461	605	434
Capacity Analysis Module:												
Vol/Sat:	0.03	0.36	0.36	0.03	0.38	0.38	0.11	0.11	0.11	0.08	0.08	0.08
Crit Volume:	38					571		158		36		
Crit Moves:	****					****		****		****		

LADWP Reseda Pipeline
Future without Project
PM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #4 ETIWANDA AVE & ROSCOE BL

Cycle (sec):	100	Critical Vol./Cap.(X):	0.648
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	41	Level Of Service:	B

Street Name:	ETIWANDA AVE						ROSCOE BL					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 1!	0 0	0	0 1!	0 0	1	0 2	1 0	1	0 2	1 0
Volume Module:												
Base Vol:	100	83	123	41	47	37	60	1483	106	75	1185	25
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	102	85	125	42	48	38	61	1513	108	77	1209	26
Added Vol:	0	0	0	0	0	0	0	5	0	0	9	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	102	85	125	42	48	38	61	1518	108	77	1218	26
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	102	85	125	42	48	38	61	1518	108	77	1218	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	102	85	125	42	48	38	61	1518	108	77	1218	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	102	85	125	42	48	38	61	1518	108	77	1218	26
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.33	0.27	0.40	0.33	0.37	0.30	1.00	2.80	0.20	1.00	2.94	0.06
Final Sat.:	490	407	603	492	564	444	1500	4201	299	1500	4408	92
Capacity Analysis Module:												
Vol/Sat:	0.21	0.21	0.21	0.09	0.08	0.09	0.04	0.36	0.36	0.05	0.28	0.28
Crit Volume:			312	42					542	77		
Crit Moves:			****	****					****	****		

LADWP Reseda Pipeline
Future without Project
PM Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #5 ETIWANDA AVE & STRATHERN ST

Cycle (sec):	100	Critical Vol./Cap.(X):	0.235
Loss Time (sec):	0	Average Delay (sec/veh):	8.9
Optimal Cycle:	0	Level Of Service:	A

Street Name:	ETIWANDA AVE						STRATHERN ST					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	22	122	26	16	130	20	14	83	26	19	84	17
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	22	124	27	16	133	20	14	85	27	19	86	17
Added Vol:	0	0	0	0	0	0	0	4	0	0	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	22	124	27	16	133	20	14	89	27	19	89	17
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	22	124	27	16	133	20	14	89	27	19	89	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	22	124	27	16	133	20	14	89	27	19	89	17
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	22	124	27	16	133	20	14	89	27	19	89	17
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.13	0.72	0.15	0.10	0.78	0.12	0.11	0.69	0.20	0.15	0.71	0.14
Final Sat.:	96	530	113	71	576	89	78	487	146	109	497	97
Capacity Analysis Module:												
Vol/Sat:	0.23	0.23	0.23	0.23	0.23	0.23	0.18	0.18	0.18	0.18	0.18	0.18
Crit Moves:			****		****		****			****		
Delay/Veh:	9.0	9.0	9.0	9.0	9.0	9.0	8.7	8.7	8.7	8.8	8.8	8.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.0	9.0	9.0	9.0	9.0	9.0	8.7	8.7	8.7	8.8	8.8	8.8
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		9.0			9.0			8.7			8.8	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		9.0			9.0			8.7			8.8	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2

LADWP Reseda Pipeline
Future without Project
PM Peak Hour

Note: Queue reported is the number of cars per lane.

Traffix 8.0.0715 (c) 2008 Dowling Assoc. Licensed to KOA CORP, MONTEREY PK

APPENDIX E
LOS Operations Worksheets – Future With Project Construction Conditions

LADWP Reseda Pipeline
Future With Project Conditions
AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #1 RESEDA BL & ROSCOE BL

Cycle (sec):	100	Critical Vol./Cap.(X):	1.528
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	RESEDA BL						ROSCOE BL					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 2	0 1	1	0 2	0 1	1	0 0	1 0	1	0 2	0 1
Volume Module:												
Base Vol:	114	709	132	142	792	147	211	1253	124	153	1112	147
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	116	723	135	145	808	150	215	1278	126	156	1134	150
Added Vol:	0	39	13	2	38	2	2	8	0	4	1	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	116	762	148	147	846	152	217	1286	126	160	1135	152
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	116	762	148	147	846	152	217	1286	126	160	1135	152
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	116	762	148	147	846	152	217	1286	126	160	1135	152
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	116	762	148	147	846	152	217	1286	126	160	1135	152
Saturation Flow Module:												
Sat/Lane:	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.91	0.09	1.00	2.00	1.00
Final Sat.:	1375	2750	1375	1375	2750	1375	1375	1252	123	1375	2750	1375
Capacity Analysis Module:												
Vol/Sat:	0.08	0.28	0.11	0.11	0.31	0.11	0.16	1.03	1.03	0.12	0.41	0.11
Crit Volume:		381		147				1413		160		
Crit Moves:		****		****				****		****		

LADWP Reseda Pipeline
Future With Project Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 RESEDA BL & CANTARA ST

Average Delay (sec/veh): 2.6 Worst Case Level Of Service: E[43.7]

Street Name:	RESEDA BL									CANTARA ST					
Approach:	North Bound				South Bound				East Bound				West Bound		
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	0	0	1!	0	0
Volume Module:																				
Base Vol:	0	879		46		58	1025		0		0	0		0		29	0		85	
Growth Adj:	1.02	1.02		1.02		1.02	1.02		1.02		1.02	1.02		1.02		1.02	1.02		1.02	
Initial Bse:	0	897		47		59	1046		0		0	0		0		30	0		87	
Added Vol:	0	52		0		8	34		0		0	0		0		0	0		0	
PasserByVol:	0	0		0		0	0		0		0	0		0		0	0		0	
Initial Fut:	0	949		47		67	1080		0		0	0		0		30	0		87	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Volume:	0	949		47		67	1080		0		0	0		0		30	0		87	
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0		0	
FinalVolume:	0	949		47		67	1080		0		0	0		0		30	0		87	
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx		6.4	6.5		6.2					
FollowUpTim:	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx		3.5	4.0		3.3					
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx		996	xxxx	xxxxx	xxxx	xxxx	xxxxx		1646	2186		972					
Potent Cap.:	xxxx	xxxx	xxxxx		703	xxxx	xxxxx	xxxx	xxxx	xxxxx		111	46		309					
Move Cap.:	xxxx	xxxx	xxxxx		703	xxxx	xxxxx	xxxx	xxxx	xxxxx		102	42		309					
Volume/Cap:	xxxx	xxxx	xxxx		0.10	xxxx	xxxx	xxxx	xxxx	xxxx		0.29	0.00		0.28					
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx		0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx		xxxxx					
Control Del:	xxxxx	xxxx	xxxxx		10.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx		xxxxx					
LOS by Move:	*	*	*		B	*	*	*	*	*		*	*		*					
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		xxxx	204		xxxxx					
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	3.1		xxxxx					
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	43.7		xxxxx					
Shared LOS:	*	*	*		*	*	*	*	*	*		*	E		*					
ApproachDel:	xxxxxx				xxxxxx			xxxxxx				43.7								
ApproachLOS:	*				*			*				E								

Note: Queue reported is the number of cars per lane.

LADWP Reseda Pipeline
Future With Project Conditions
AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #3 RESEDA BL & STRATHERN ST

Cycle (sec):	100	Critical Vol./Cap.(X):	0.872
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	112	Level Of Service:	D

Street Name:	RESEDA BL						STRATHERN ST					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 0	1 0	1	0 1	1 0	0	0 1!	0 0	0	0 1!	0 0
Volume Module:												
Base Vol:	41	860	27	30	1003	38	57	109	57	74	142	33
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	42	877	28	31	1023	39	58	111	58	75	145	34
Added Vol:	0	41	0	0	32	2	2	7	0	0	8	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	42	918	28	31	1055	41	60	118	58	75	153	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	42	918	28	31	1055	41	60	118	58	75	153	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	918	28	31	1055	41	60	118	58	75	153	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	42	918	28	31	1055	41	60	118	58	75	153	43
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.97	0.03	1.00	1.93	0.07	0.25	0.50	0.25	0.28	0.56	0.16
Final Sat.:	1500	1456	44	1500	2888	112	382	750	369	418	846	236
Capacity Analysis Module:												
Vol/Sat:	0.03	0.63	0.63	0.02	0.37	0.37	0.16	0.16	0.16	0.18	0.18	0.18
Crit Volume:			946	31			60				271	
Crit Moves:			****	****			****				****	

LADWP Reseda Pipeline
Future With Project Conditions
AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #4 ETIWANDA AVE & ROSCOE BL

Cycle (sec):	100	Critical Vol./Cap.(X):	1.288
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	ETIWANDA AVE						ROSCOE BL					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1	0 0	1 0	1	0 2	0 1
Volume Module:												
Base Vol:	81	107	104	106	95	79	34	1286	81	107	1265	55
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	83	109	106	108	97	81	35	1312	83	109	1290	56
Added Vol:	0	0	1	0	0	0	0	14	0	8	7	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	83	109	107	108	97	81	35	1326	83	117	1297	56
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	83	109	107	108	97	81	35	1326	83	117	1297	56
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	109	107	108	97	81	35	1326	83	117	1297	56
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	83	109	107	108	97	81	35	1326	83	117	1297	56
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.28	0.36	0.36	0.38	0.34	0.28	1.00	0.94	0.06	1.00	2.00	1.00
Final Sat.:	415	548	537	568	509	423	1500	1412	88	1500	3000	1500
Capacity Analysis Module:												
Vol/Sat:	0.20	0.20	0.20	0.19	0.19	0.19	0.02	0.94	0.94	0.08	0.43	0.04
Crit Volume:		299		108				1408		117		
Crit Moves:		****		****				****		****		

LADWP Reseda Pipeline
Future With Project Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #5 ETIWANDA AVE & STRATHERN ST

Cycle (sec):	100	Critical Vol./Cap.(X):	0.467
Loss Time (sec):	0	Average Delay (sec/veh):	10.4
Optimal Cycle:	0	Level Of Service:	B

Street Name:	ETIWANDA AVE						STRATHERN ST					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1!	0 0	0 0	1!	0 0	0 0	1!	0 0	0 0	1!	0 0
Volume Module:												
Base Vol:	27	156	42	24	132	26	26	142	21	22	146	31
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	28	159	43	24	135	27	27	145	21	22	149	32
Added Vol:	0	0	0	0	0	9	0	7	0	0	8	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	28	159	43	24	135	36	27	152	21	22	157	32
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	28	159	43	24	135	36	27	152	21	22	157	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	159	43	24	135	36	27	152	21	22	157	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	28	159	43	24	135	36	27	152	21	22	157	32
Saturation Flow Module:												
Adjustment:	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Lanes:	0.12	0.69	0.19	0.13	0.69	0.18	0.13	0.76	0.11	0.11	0.74	0.15
Final Sat.:	59	341	92	61	334	88	64	365	51	52	360	73
Capacity Analysis Module:												
Vol/Sat:	0.47	0.47	0.47	0.40	0.40	0.40	0.42	0.42	0.42	0.44	0.44	0.44
Crit Moves:			****		****			****			****	
Delay/Veh:	10.6	10.6	10.6	10.2	10.2	10.2	10.4	10.4	10.4	10.5	10.5	10.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.6	10.6	10.6	10.2	10.2	10.2	10.4	10.4	10.4	10.5	10.5	10.5
LOS by Move:	B	B	B	B	B	B	B	B	B	B	B	B
ApproachDel:	10.6			10.2			10.4			10.5		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	10.6			10.2			10.4			10.5		
LOS by Appr:	B			B			B			B		
AllWayAvgQ:	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4

LADWP Reseda Pipeline
Future With Project Conditions
AM Peak Hour

Note: Queue reported is the number of cars per lane.

Traffix 8.0.0715 (c) 2008 Dowling Assoc. Licensed to KOA CORP, MONTEREY PK

LADWP Reseda Pipeline
Future With Project Conditions
PM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #1 RESEDA BL & ROSCOE BL

Cycle (sec): 100 Critical Vol./Cap.(X): 1.584
Loss Time (sec): 0 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: F

Street Name:	RESEDA BL						ROSCOE BL					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 2	0 1	1	0 2	0 1	1	0 0	1 0	1	0 2	1 0
Volume Module:												
Base Vol:	143	837	153	190	917	179	211	1276	128	109	1012	224
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	146	854	156	194	935	183	215	1302	131	111	1032	228
Added Vol:	0	19	11	0	25	0	1	3	0	2	7	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	146	873	167	194	960	183	216	1305	131	113	1039	229
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	146	873	167	194	960	183	216	1305	131	113	1039	229
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	146	873	167	194	960	183	216	1305	131	113	1039	229
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	146	873	167	194	960	183	216	1305	131	113	1039	229
Saturation Flow Module:												
Sat/Lane:	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.91	0.09	1.00	2.46	0.54
Final Sat.:	1375	2750	1375	1375	2750	1375	1375	1250	125	1375	3379	746
Capacity Analysis Module:												
Vol/Sat:	0.11	0.32	0.12	0.14	0.35	0.13	0.16	1.04	1.04	0.08	0.31	0.31
Crit Volume:		436		194					1435	113		
Crit Moves:		****		****					****	****		

LADWP Reseda Pipeline
Future With Project Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 RESEDA BL & CANTARA ST

Average Delay (sec/veh): 1.9 Worst Case Level Of Service: E[45.5]

Street Name:	RESEDA BL									CANTARA ST					
Approach:	North Bound				South Bound				East Bound				West Bound		
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	0	0	1!	0	0
Volume Module:																				
Base Vol:	0	1038		49		80	1119		0		0	0		0		17	0		61	
Growth Adj:	1.02	1.02		1.02		1.02	1.02		1.02		1.02	1.02		1.02		1.02	1.02		1.02	
Initial Bse:	0	1059		50		82	1141		0		0	0		0		17	0		62	
Added Vol:	0	30		0		1	26		0		0	0		0		0	0		0	
PasserByVol:	0	0		0		0	0		0		0	0		0		0	0		0	
Initial Fut:	0	1089		50		83	1167		0		0	0		0		17	0		62	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Volume:	0	1089		50		83	1167		0		0	0		0		17	0		62	
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0		0	
FinalVolume:	0	1089		50		83	1167		0		0	0		0		17	0		62	
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx		xxxxx		4.1	xxxx		xxxxx		xxxxx	xxxx		xxxxx		6.4	6.5		6.2	
FollowUpTim:	xxxxx	xxxx		xxxxx		2.2	xxxx		xxxxx		xxxxx	xxxx		xxxxx		3.5	4.0		3.3	
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx		xxxxx		1139	xxxx		xxxxx		xxxx	xxxx		xxxxx		1863	2446		1114	
Potent Cap.:	xxxx	xxxx		xxxxx		621	xxxx		xxxxx		xxxx	xxxx		xxxxx		81	32		256	
Move Cap.:	xxxx	xxxx		xxxxx		621	xxxx		xxxxx		xxxx	xxxx		xxxxx		73	27		256	
Volume/Cap:	xxxx	xxxx		xxxx		0.13	xxxx		xxxx		xxxx	xxxx		xxxx		0.24	0.00		0.24	
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx		xxxxx		0.5	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx	
Control Del:	xxxxx	xxxx		xxxxx		11.7	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
LOS by Move:	*	*		*		B	*		*		*	*		*		*	*		*	
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	165		xxxxx	
SharedQueue:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	2.3		xxxxx	
Shrd ConDel:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	45.5		xxxxx	
Shared LOS:	*	*		*		*	*		*		*	*		*		*	E		*	
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					45.5				
ApproachLOS:	*					*					*					E				

Note: Queue reported is the number of cars per lane.

LADWP Reseda Pipeline
Future With Project Conditions
PM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #3 RESEDA BL & STRATHERN ST

Cycle (sec):	100	Critical Vol./Cap.(X):	0.884
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	124	Level Of Service:	D

Street Name:	RESEDA BL						STRATHERN ST					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0 1	0	1	0	0	0	1! 0	0	0	1! 0 0
Volume Module:												
Base Vol:	37	998	49	43	1045	50	34	65	51	35	43	33
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	38	1018	50	44	1066	51	35	66	52	36	44	34
Added Vol:	0	20	0	0	25	1	1	4	0	0	3	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	38	1038	50	44	1091	52	36	70	52	36	47	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	38	1038	50	44	1091	52	36	70	52	36	47	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	38	1038	50	44	1091	52	36	70	52	36	47	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	38	1038	50	44	1091	52	36	70	52	36	47	43
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.95	0.05	1.00	1.91	0.09	0.23	0.44	0.33	0.29	0.37	0.34
Final Sat.:	1500	1431	69	1500	2864	136	339	667	494	428	561	511
Capacity Analysis Module:												
Vol/Sat:	0.03	0.73	0.73	0.03	0.38	0.38	0.11	0.11	0.11	0.08	0.08	0.08
Crit Volume:			1088	44				158		36		
Crit Moves:			****	****				****		****		

LADWP Reseda Pipeline
Future With Project Conditions
PM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #4 ETIWANDA AVE & ROSCOE BL

Cycle (sec):	100	Critical Vol./Cap.(X):	1.382
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	ETIWANDA AVE						ROSCOE BL					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	0	0	0	1! 0	0	0	1 0
Volume Module:												
Base Vol:	100	83	123	41	47	37	60	1483	106	75	1185	25
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	102	85	125	42	48	38	61	1513	108	77	1209	26
Added Vol:	0	0	8	0	0	0	0	13	0	1	9	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	102	85	133	42	48	38	61	1526	108	78	1218	26
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	102	85	133	42	48	38	61	1526	108	78	1218	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	102	85	133	42	48	38	61	1526	108	78	1218	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	102	85	133	42	48	38	61	1526	108	78	1218	26
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.32	0.26	0.42	0.33	0.37	0.30	1.00	0.93	0.07	1.00	2.94	0.06
Final Sat.:	478	397	625	492	564	444	1500	1401	99	1500	4408	92
Capacity Analysis Module:												
Vol/Sat:	0.21	0.21	0.21	0.09	0.08	0.09	0.04	1.09	1.09	0.05	0.28	0.28
Crit Volume:			320	42					1634	78		
Crit Moves:			****	****					****	****		

LADWP Reseda Pipeline
Future With Project Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #5 ETIWANDA AVE & STRATHERN ST

Cycle (sec):	100	Critical Vol./Cap.(X):	0.321
Loss Time (sec):	0	Average Delay (sec/veh):	8.9
Optimal Cycle:	0	Level Of Service:	A

Street Name:	ETIWANDA AVE						STRATHERN ST					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	22	122	26	16	130	20	14	83	26	19	84	17
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	22	124	27	16	133	20	14	85	27	19	86	17
Added Vol:	0	0	0	0	0	9	0	4	0	0	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	22	124	27	16	133	29	14	89	27	19	89	17
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	22	124	27	16	133	29	14	89	27	19	89	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	22	124	27	16	133	29	14	89	27	19	89	17
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	22	124	27	16	133	29	14	89	27	19	89	17
Saturation Flow Module:												
Adjustment:	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Lanes:	0.13	0.72	0.15	0.09	0.75	0.16	0.11	0.69	0.20	0.15	0.71	0.14
Final Sat.:	72	397	85	51	413	92	58	363	109	81	371	73
Capacity Analysis Module:												
Vol/Sat:	0.31	0.31	0.31	0.32	0.32	0.32	0.24	0.24	0.24	0.24	0.24	0.24
Crit Moves:			****		****			****			****	
Delay/Veh:	9.0	9.0	9.0	9.0	9.0	9.0	8.7	8.7	8.7	8.8	8.8	8.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.0	9.0	9.0	9.0	9.0	9.0	8.7	8.7	8.7	8.8	8.8	8.8
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		9.0			9.0			8.7			8.8	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		9.0			9.0			8.7			8.8	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2

LADWP Reseda Pipeline
Future With Project Conditions
PM Peak Hour

Note: Queue reported is the number of cars per lane.

Traffix 8.0.0715 (c) 2008 Dowling Assoc. Licensed to KOA CORP, MONTEREY PK