GLENDALE 2018 WASTEWATER CHANGE PETITION

Initial Study/Mitigated Negative Declaration

Prepared for
City of Glendale

June 2018

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Prepared for

City of Glendale
613 E. Broadway
Glendale, CA 91206
Contact: Michael De Ghetto, P.E.

June 2018

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Table of Contents

Page

Appendices

Appendix A: Air Quality Modeling Data

Appendix B: Biological Resources Assessment Memo

Appendix C1: Cultural Resources Assessment/Appendix C2: Paleontological Resources Assessment

Appendix D: Greenhouse Gas Emissions Modeling Data

Appendix E: Hydraulic Modeling Report

Appendix F: Noise Modeling Data

Appendix G: Glendale's Wastewater Change Petition

Appendix H: Native American Tribal Consultation

List of Figures

List of Tables

Initial Study Checklist

California Environmental Quality Act

Initial Study

(as required by Sec. 15063 of the Public Resources Code)

1. **Project Title:** Glendale 2017 Wastewater Change Petition

2. **Lead Agency Name and Address:** City of Glendale
613 E. Broadway
Glendale, CA 91206

3. **Contact Person and Phone Number:** Michael DeGhetto, P.E.
Chief Assistant General Manager
Glendale Water & Power
(818) 551-3023

4. **Project Location:** The proposed project site includes the Glendale Water & Power (GWP) and Pasadena Water & Power (PWP) service areas within the Cities of Glendale and Pasadena, as well as adjacent portions of the City of San Marino, City of Los Angeles, City of La Canada-Flintridge, and unincorporated community of Altadena, and is generally bounded by the San Gabriel Mountains to the north; the City of Sierra Madre to the east; the State Route (SR) 134 (Ventura Freeway), SR-2 (Glendale Freeway), and the Los Angeles River to the south; and the City of Burbank, Griffith Park, and Verdugo Hills to the west.

5. **Project Sponsor's Name and Address:** City of Glendale
613 E. Broadway
Glendale, CA 91206

6. **General Plan Designation:** Numerous (varies by location)

7. **Zoning:** Numerous (varies by location)

8. **Description of Project:** The City of Glendale proposes to gradually decrease the volume of treated wastewater discharged from the Los Angeles-Glendale Water Reclamation Plant (LAGWRP) to the Los Angeles River (River) in order to increase the delivery of recycled water to various users within the GWP and PWP service areas, as well construction and operation of new recycled water distribution facilities to serve new customers within the GWP service area. The construction and operation of the PWP recycled water system is evaluated in the Pasadena Non-Potable Water Project Environmental Impact Report (EIR)[1] certified in 2016.

9. **Surrounding Land Uses and Setting: Briefly describe the project's surroundings:** The project site is generally bounded by the San Gabriel Mountains to the north; the City of Sierra Madre to the east; the State Route (SR) 134 (Ventura Freeway), SR-2 (Glendale Freeway), and the Los Angeles River to the south; and the City of Burbank, Griffith Park, and Verdugo Hills to the west. The proposed recycled water distribution facilities are proposed within existing public street rights-of-way and adjacent public and private property.

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[1] *City of Pasadena. Pasadena Non-Potable Water Project Draft Environmental Impact Report. SCH #2014081091. June 2015. The Final EIR for the project was certified on February 22, 2016 by the Pasadena City Council.*

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement).

- State Water Resources Control Board – Approval of Wastewater Change Petition

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

ESA, on behalf of the City of Glendale, mailed out formal AB 52 Consultation Request letters to affected tribal groups in the project area, including the Fernandeño Tatavium Band of Mission Indians, on February 12, 2018. Requests for formal government-to-government consultation were not received by these tribes within the stated 30-day consultation request period. Thus, no formal consultation between these tribes and the City regarding the proposed project is necessary.

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

PURPOSE OF THE INITIAL STUDY

The proposed project, Glendale Water and Power's 2017 Wastewater Change Petition, is analyzed in this Initial Study/Mitigated Negative Declaration (IS/MND), in accordance with the California Environmental Quality Act (CEQA), to determine if approval of the proposed project would have a significant impact on the environment. This IS/MND has been prepared pursuant to the requirements of the California Environmental Quality Act (CEQA), under Public Resources Code 21000-21177, of the State *CEQA Guidelines* (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387) and under the guidance of the City of Glendale. The City of Glendale is the Lead Agency under CEQA and is responsible for preparing the IS/MND for the proposed project.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

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

☐ Aesthetics	☐ Agriculture Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology / Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology / Water Quality
☐ Land Use / Planning	☐ Mineral Resources	☐ Noise
☐ Population / Housing	☐ Public Services	☐ Recreation
☐ Transportation / Traffic	☐ Tribal Cultural Resources	☐ Utilities / Service Systems
☐ Mandatory Findings of Significance		

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions 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 or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

______________________________ 6/5/18
Signature Date

ERIK KRAUSE
Printed name For City of Glendale

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
2) A list of "Supporting Information Sources" should be attached, and other sources used or individuals contacted should be cited in the discussion.
3) Impact Columns Heading Definitions:
   a) **"Potentially Significant Impact"** is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
   b) **"Potentially Significant Unless Mitigation Incorporated"** applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The mitigation measures must be described, along with a brief explanation of how they reduce the effect to a less than significant level.
   c) **"Less Than Significant Impact"** applies where the project creates no significant impacts, only Less Than Significant impacts.
   d) **"No Impact"** applies where a project does not create an impact in that category. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one proposed (e.g., the project falls outside of a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
4) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
   a) Earlier Analysis Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
5) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
6) The explanation of each issue should identify:
   a) The significance criteria or threshold, if any, used to evaluate each question; and
   b) The mitigation measure identified, if any, to reduce the impact to less than significance.

I. AESTHETICS – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

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 Dept. 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:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
Convert prime farmland, unique farmland, or farmland of statewide importance, as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
Conflict the existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 1220(g)), timberland (as defined by public resources code section 4526), or timberland zoned timberland production (as defined by government code section 51104(g))?	☐	☐	☐	☒
Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use?	☐	☐	☐	☒

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:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

IV. BIOLOGICAL RESOURCES – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐

IV. BIOLOGICAL RESOURCES – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

V. CULTURAL RESOURCES – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

VI. GEOLOGY AND SOILS – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒

VI. GEOLOGY AND SOILS – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

VII. GREENHOUSE GAS EMISSIONS – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

VIII. HAZARDS AND HAZARDOUS MATERIALS – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
	☐	☐	☒	☐

VIII. HAZARDS AND HAZARDOUS MATERIALS – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				
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?	☐	☐	☐	☒

IX. HYDROLOGY AND WATER QUALITY – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐

X. LAND USE AND PLANNING – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

XI. MINERAL RESOURCES -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

XII. NOISE – Would the project result in:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity due to construction activities above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

XII. NOISE – Would the project result in:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

XIII. POPULATION AND HOUSING – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

XIV. PUBLIC SERVICES	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

XV. RECREATION	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

XVI. TRANSPORTATION/TRAFFIC – Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

XVII. TRIBAL CULTURAL RESOURCES	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☒

XVII. TRIBAL CULTURAL RESOURCES	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

XVIII. UTILITIES AND SERVICE SYSTEMS – Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

XIX. MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐

XIX. MANDATORY FINDINGS OF SIGNIFICANCE	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
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)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Attachment A
Project Description

ATTACHMENT A - PROJECT DESCRIPTION

A. INTRODUCTION

The City of Glendale (or Glendale) is proposing to incrementally reduce discharges of tertiary-treated wastewater from the Los Angeles-Glendale Water Reclamation Plant (LAGWRP) to the Los Angeles River (River) in order to allow for increased use of recycled water for irrigation and other non-potable uses. The areas of recycled water use lie within the Glendale Water & Power (GWP) and Pasadena Water & Power (PWP) service areas, which includes the majority of the areas within Glendale and Pasadena city boundaries as well as adjacent portions of the City of San Marino, City of Los Angeles, City of La Canada-Flintridge, and unincorporated Los Angeles County community of Altadena. The proposed project includes a reduction in wastewater discharges from the LAGWRP to the River to support increased application of recycled water in the GWP and PWP service areas, construction and operation of three new recycled water distribution pipelines and associated pump stations within the City of Glendale, and a pipeline connection to Pasadena's recycled water distribution system. Pursuant to the City's 2017 Wastewater Change Petition WW0097 and associated change in place of use filed with the State Water Resources Control Board (SWRCB) (Wastewater Change Petition), the proposed wastewater discharge reductions would occur over time with the increased supply of recycled water used to offset and/or supplement potable water use. The following provides a discussion of the project location, existing conditions at the project site, project background and applicable permits, characteristics of the proposed project, and necessary approvals required for the project. It should be noted that construction and operation of the City of Pasadena's (Pasadena) recycled water system improvements, as well as the application of recycled water within the PWP service area, were previously evaluated in the Pasadena Non-Potable Water Project Environmental Impact Report (EIR).[1] As such, those improvements and activities are not addressed in this Initial Study.

B. PROJECT LOCATION AND SURROUNDING USES

The proposed project site includes areas within the Cities of Glendale and Pasadena, as well as adjacent portions of the City of San Marino, City of Los Angeles, City of La Canada-Flintridge, and unincorporated Los Angeles County community of Altadena. The proposed project area is generally bounded by the San Gabriel Mountains to the north; the City of Sierra Madre to the east; the State Route (SR) 134 (Ventura Freeway), SR-2 (Glendale Freeway), and the Los Angeles River to the south; and the City of Burbank, Griffith Park, and Verdugo Hills to the west. The location of the project site is illustrated in **Figure A-1**, *Regional Location Map*, below, while an aerial photograph of LAGWRP and adjacent Channel with surrounding land uses is provided below in **Figure A-2**, *Aerial Photograph*.

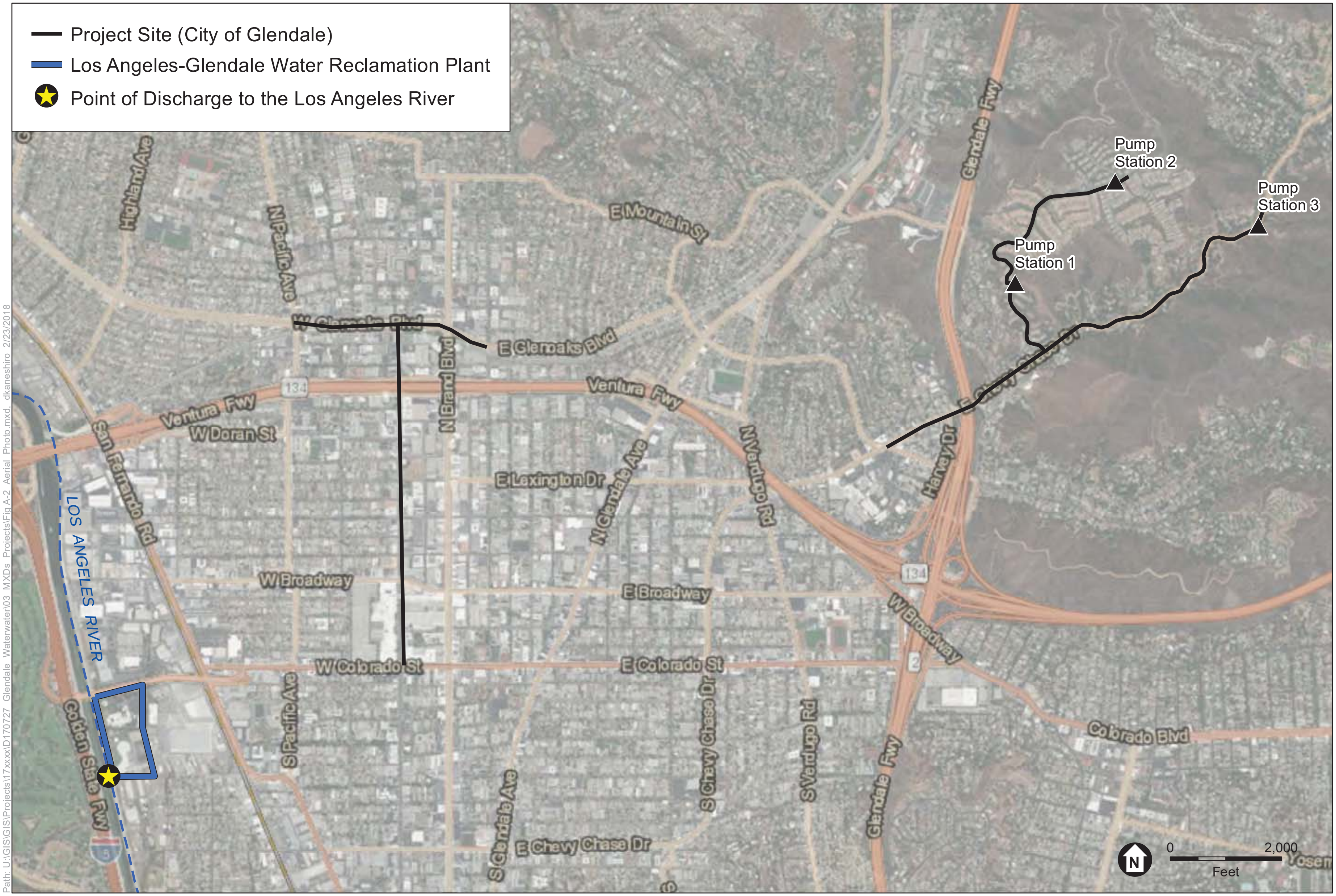
[1] *City of Pasadena. Pasadena Non-Potable Water Project Draft Environmental Impact Report. SCH #2014081091. June 2015. The Final EIR for the project was certified on February 22, 2016 by the Pasadena City Council.*

SOURCE: ESRI

Glendale 2017 Wastewater Change Petition WW0097 Project

Figure A-1
Regional Vicinity Map

ESA



SOURCE: ESRI

Glendale 2017 Wastewater Change Petition WW0097 Project

Figure A-2
Aerial Photograph - LAGWRP and City of Glendale Improvements

ESA

C. ENVIRONMENTAL SETTING

1. Project Background, Existing Conditions and Permits

a. Los Angeles-Glendale Water Reclamation Plant

The following provides a summary of the Glendale's recycled water system, including LAGWRP. LAGWRP is located adjacent to and southwest of the City of Glendale in the City of Los Angeles and is operated by the City of Los Angeles Bureau of Sanitation. LAGWRP was originally built as a "hydraulic relief" plant with a capacity of 20 million gallons per day (mgd) that is designed to decrease sewer flow in the downstream collection system, thereby decreasing sewer flow to the City of Los Angeles' Hyperion Treatment Plant (HTP).[2] LAGWRP produces disinfected tertiary recycled water compliant with California Department of Public Health (CDPH) guidelines for producing and using recycled water, as codified in California Code of Regulations, Title 22, Division 4, Chapter 3, (Water Recycling Criteria). LAGWRP uses screening, primary settling, biological secondary treatment (activated sludge process), nitrification/denitrification, tertiary treatment using sand filters, and chlorine disinfection in its treatment process. The sludge generated at LAGWRP is sent back to the sewer, which conveys the sludge downstream to Hyperion Treatment Plant. Recycled water produced by LAGWRP may be used for irrigation, impoundments, industrial, and other uses under Title 22.[3]

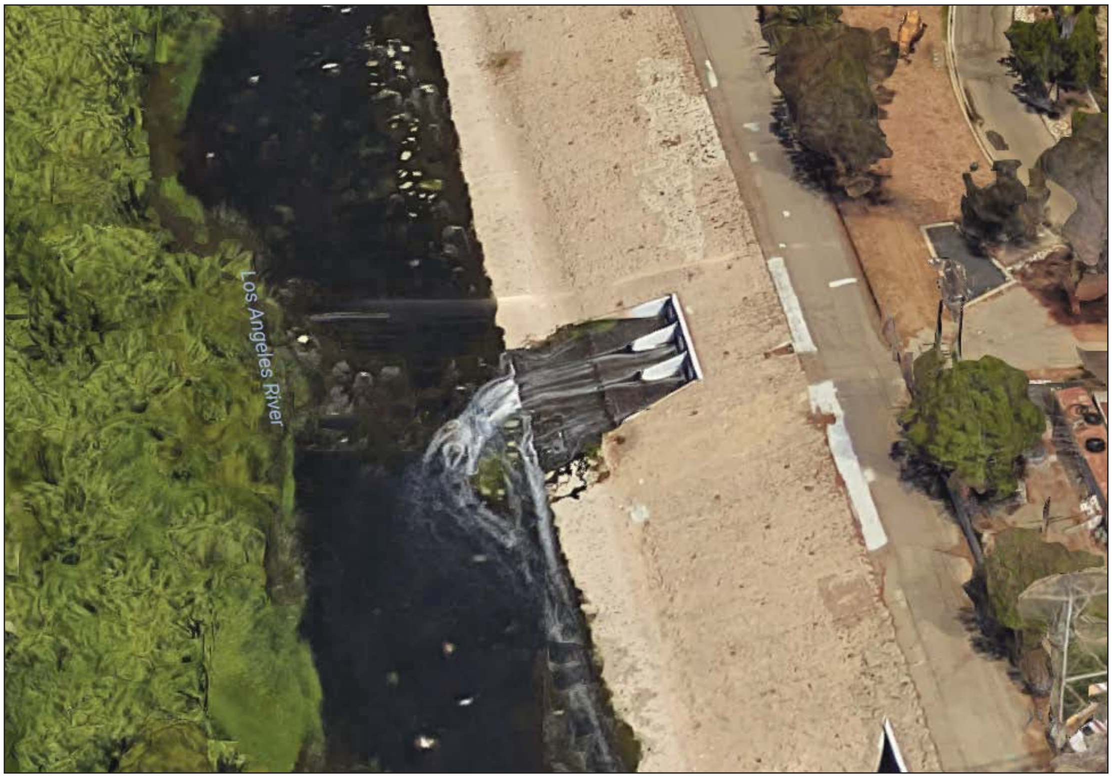
LAGWRP recycled water is currently used for plant operations and supplies the cities of Los Angeles and Glendale recycled water distribution systems. Excess recycled water is discharged to the Los Angeles River, as illustrated above in Figure A-2 and below in **Figure A-3**, *Discharge Location Photos*. The water discharged to the river has the same quality as water sent to the recycled water systems, but it is dechlorinated. The cities of Los Angeles and Glendale each own 50 percent of LAGWRP facility and are each entitled to 50 percent of the produced water.[4] Per the Reclaimed Water System Participation Agreement No. 15,075 between the City of Glendale and City of Pasadena (Glendale-Pasadena Agreement), Pasadena is entitled to up to 6,000 acre-feet per year (AFY), or approximately 60 percent of the City of Glendale's LAGWRP allotment (which is equivalent to 30 percent of total LAGWRP product water or 5.4 mgd). Although Pasadena has paid for this right since inception of the Glendale-Pasadena Agreement, this right is not currently exercised because Pasadena does not currently have recycled water infrastructure. However, it would be exercised in the future with implementation of Pasadena's Non-Potable Water Project components and the recycled water connection to GWP facilities provided by the proposed project.[5]

[2] *City of Pasadena. Pasadena Non-Potable Water Project Draft Environmental Impact Report (SCH #2014081091). June 2015. Pg. 2-14 to 2-17. Available at: https://ww5.cityofpasadena.net/water-and-power/wp-content/uploads/sites/54/2017/08/Pasadena-Non-Potable-Water-Project_Public-Draft-EIR_June2015-1.pdf. Accessed December 2017.*

[3] *Ibid.*

[4] *LA Sanitation. Los Angeles-Glendale Water Reclamation Plant – Background. Available at: https://www.lacitysan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-cw/s-lsh-wwd-cw-p/s-lsh-wwd-cw-p-lagwrp;jsessionid=tjxs_c4p-MHq7DojYn3mqAwzqowBo-0XNnX4OzJgOTS2MNs1aPIx!708503794!1329830061?_afrLoop=6966895335982871&_afrWindowMode=0&_afrWindowId=cwBqb8T9#!%40%40%3F_afrWindowId%3DcwBqb8T9%26_afrLoop%3D6966895335982871%26_afrWindowMode%3D0%26_adf.ctrl-state%3D18cs7ia6r4_4. Accessed February 2018.*

[5] *City of Pasadena. Pasadena Non-Potable Water Project Draft Environmental Impact Report (SCH #2014081091). June 2015. Pg. 2-14 to 2-17. Available at: https://ww5.cityofpasadena.net/water-and-power/wp-content/uploads/sites/54/2017/08/Pasadena-Non-Potable-Water-Project_Public-Draft-EIR_June2015-1.pdf. Accessed December 2017.*



PHOTOGRAPH 1: Los Angeles River at LAGWRP Discharge Point

PHOTOGRAPH 2: Aerial of LAGWRP and Discharge Point

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SOURCE: City of Glendale, 2016

Glendale 2017 Wastewater Change Petition WW0097 Project

Figure A-3
Discharge Location Photos

ESA

According to the Glendale-Pasadena Agreement, if the available recycled water is insufficient to meet both parties' needs and obligations "the Parties shall share the available reclaimed water on an equal basis".[6] PWP's allotment would be reduced to approximately 4.5 mgd during high demand periods in the summer and after full buildout of both Glendale's and Pasadena's systems. To make up for the difference between the available supply and the high demand, at times PWP will provide drinking water to the non-potable water system customers.[7]

b. Pasadena Non-Potable Water Project

In February 2016, as noted previously, Pasadena approved its Non-Potable Water Project and certified the associated Final Environmental Impact Report (SCH No. 2014081091), which allows Pasadena to build its non-potable water (including recycled/treated wastewater, tunnel water and stream water) storage and distribution infrastructure in order to offset potable water use, which is derived from local groundwater and surface water supplies and imported water from the Metropolitan Water District of Southern California.[8] PWP is currently developing plans to construct the new distribution system to deliver non-potable water from LAGWRP to the PWP's service area. Phase 1 of the Pasadena Non-Potable Water Project includes connections to four customers with large irrigation and cooling demands: Art Center College of Design, Brookside Golf Course, Rose Bowl Stadium, and Brookside Park. Phase 2 will include the Pasadena's Glenarm Power Plant, which will use the water for cooling and processes in place of potable water, saving millions of gallons of potable water annually.[9] The proposed Project could ultimately provide more than 3,000 AF of non-potable water annually for non-potable water use, meeting nearly 10 percent of Pasadena's total water demand.

c. Glendale Recycled Water System

As noted previously, the City of Glendale is entitled to 50 percent of the effluent from LAGWRP, which is a 20-mgd facility co-owned by Glendale and the City of Los Angeles. Its current level of treatment is Title 22 (tertiary) with nitrogen removal (NDN).[10] Recycled water from LAGWRP is used for landscape irrigation at cemeteries, schools, parks, and high rises, and for dual plumbing in several buildings and facilities. In 2014, the Glendale served recycled water to 75 service connections with a combined demand of nearly 1,721 AFY or approximately 1.5 mgd. The Glendale's existing recycled water system consists of approximately 22 miles of purple pipe, five storage facilities, and six pump stations. Existing recycled water system facilities are depicted below in **Figure A-4**, *Glendale Existing Recycled Water Facilities*.

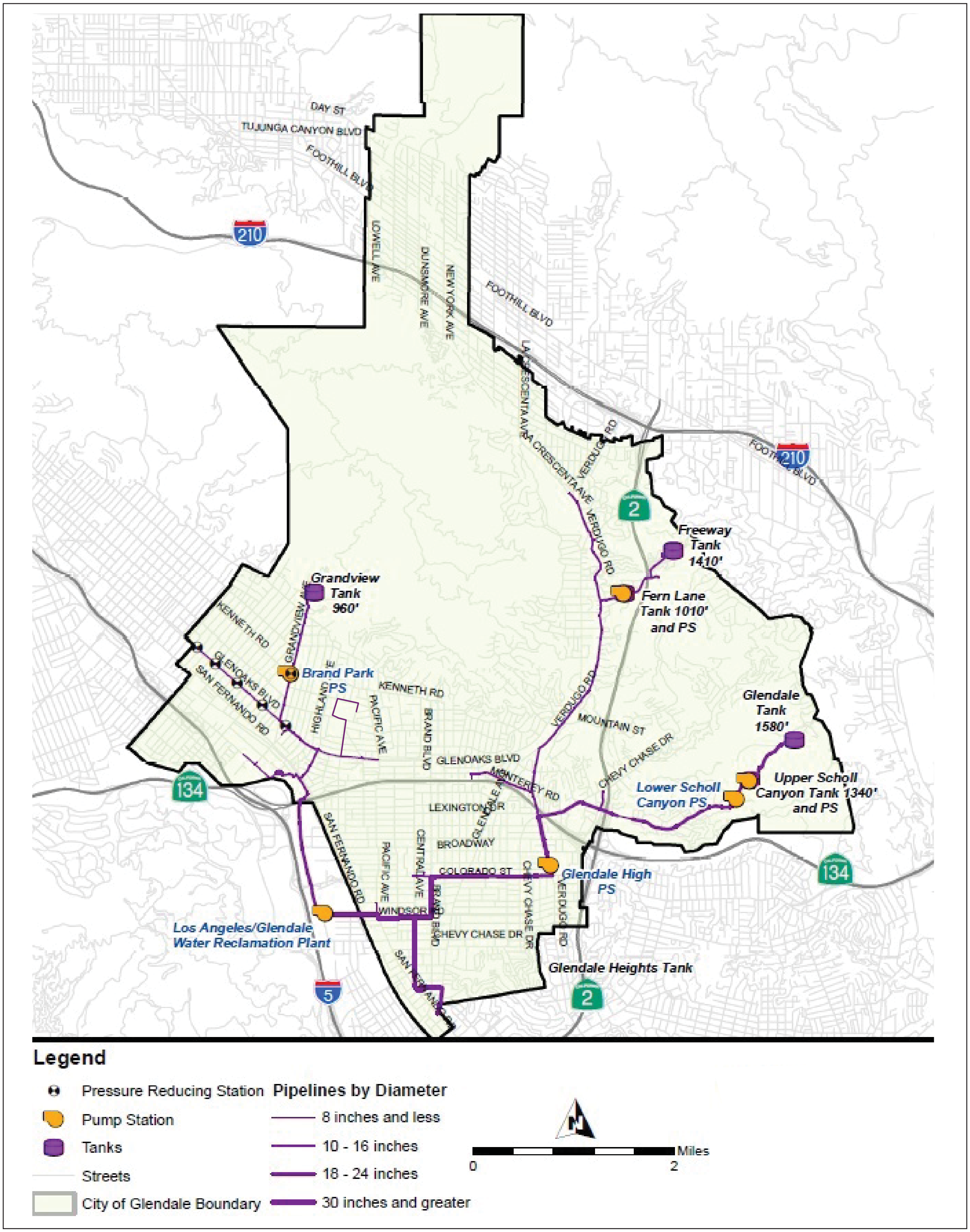
[6] *City of Glendale and City of Pasadena. Reclaimed Water System Participation Agreement No. 15,075. April 1993.*

[7] *City of Pasadena. Pasadena Non-Potable Water Project Draft Environmental Impact Report (SCH #2014081091). June 2015. Pg. 2-14 to 2-17. Available at: https://ww5.cityofpasadena.net/water-and-power/wp-content/uploads/sites/54/2017/08/Pasadena-Non-Potable-Water-Project_Public-Draft-EIR_June2015-1.pdf. Accessed December 2017.*

[8] *Ibid. Page 3.9-5.*

[9] *City of Pasadena. Non-Potable Water Project website. "Project Background". Available at: https://ww5.cityofpasadena.net/water-and-power/recycledwater/. Accessed December 2017.*

[10] *City of Glendale. City of Glendale 2015 Urban Water Management Plan. Available at: http://www.glendaleca.gov/home/showdocument?id=29585. Page 1-7. Accessed December 2017.*



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SOURCE: City of Glendale, 2017

Glendale 2017 Wastewater Change Petition WW0097 Project

Figure A-4
Glendale Existing Recycled Water Facilities

ESA

d. Existing Permits

The City of Los Angeles and the City of Glendale jointly own LAGWRP. However, the City of Los Angeles is the sole operator LAGWRP pursuant to the Joint Powers Agreement between the two cities. LAGWRP currently receives wastewater from the cities of Glendale, Burbank, Los Angeles, and La Canada-Flintridge and from the Los Angeles Zoo. The discharge of wastewater is regulated under Order No. R4-2011-0197 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0053953 adopted on December 8, 2011. This Order was subsequently revised by Order No. R4-2011-0197-A01 adopted by the Los Angeles Regional Water Quality Control Board (LARWQCB) on July 12, 2012. Order No. R4-2011-0197 also serves as a permit under the National Pollutant Discharge Elimination System (NPDES No. CA0053953).[11]

2. Point of Discharge

LAGWRP is permitted by the LARWQCB to discharge directly to the Los Angeles River pursuant to Order No. R4-2011-0197-A01. The latitude and longitude of discharge point is 34°08'13.7"N and 118°16'30.4"W. The location of the discharge point and the River channel are shown in the photographs provided above in Figure A-3. Glendale is not proposing to change its point of discharge.

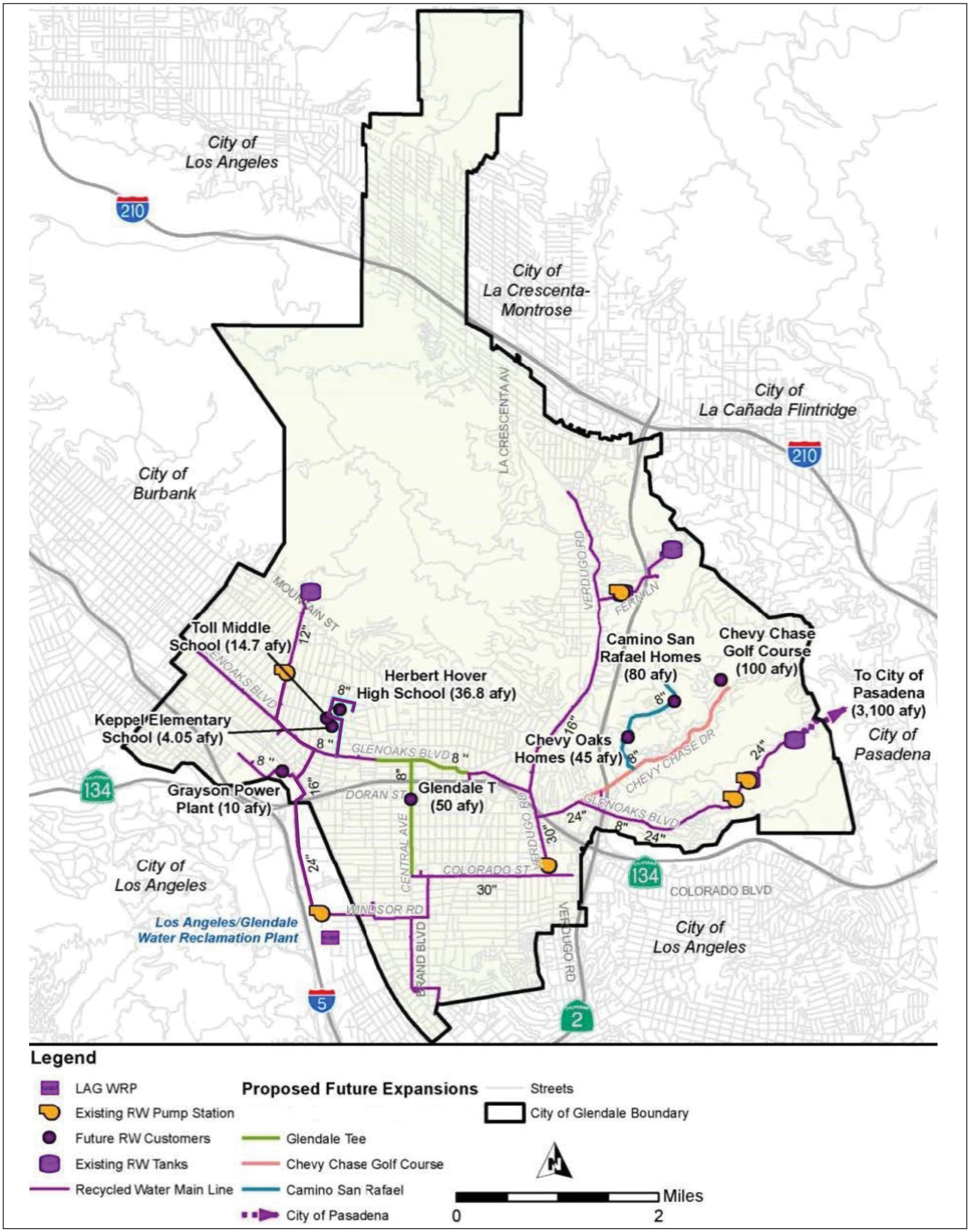
3. Place of Use

Currently, approximately 39% of Glendale's share of the tertiary-treated effluent produced at LAGWRP (approximately 2,000 acre-feet [AF] in 2016) is beneficially reused by GWP for landscape irrigation, soil compaction, and other non-potable applications throughout its service area. **Figure A-5**, *Place of Use – GWP Service Area*, and **Figure A-6**, *Place of Use – PWP Service Area*, below, identify the current place of use within these geographies.

D. LAND USE AND ZONING DESIGNATIONS

The project site includes the entire GWP and PWP recycled water service areas within each respective City, as well as several portions of other adjacent jurisdictions that are supplied with recycled water by the GWP. While the General Plan land use designations and zoning designations within the project site vary substantially, it is important to note that among the existing and anticipated future users of recycled water produced at LAGWRP, those with the highest recycled water demands include Industrial uses (e.g., Grayson Power Plant), Institutional uses (e.g., public schools including Keppel Elementary School, Toll Middle School, and Herbert Hoover High School), Public Park/Open Space/Recreation uses (e.g., various public parks, Chevy Chase Golf Course), and Residential uses (e.g., Chevy Oaks Homes and Camino San Rafael Homes). Refer to Figures A-5 and A-6 above for the location of the various recycled water users within the project site.

[11] *California Regional Water Quality Control Board – Los Angeles Region. Notice of Public Hearing: Proposed Reissuance of Waste Discharge Requirements (National Pollutant Discharge Elimination System). Public Notice No. 17-002, NPDES No. CA0053953. Available at: https://www.waterboards.ca.gov/losangeles/board_decisions/tentative_orders/individual/npdes/City_of_Los_Angeles _-_Glendale /152017/LAGWRPCA0053953NoticeofPublicHearing1-05-2017.pdf. Accessed December 2017.*



SOURCE: City of Glendale, 2017

Glendale 2017 Wastewater Change Petition WW0097 Project

Figure A-5
Place of Use – GWP Service Area

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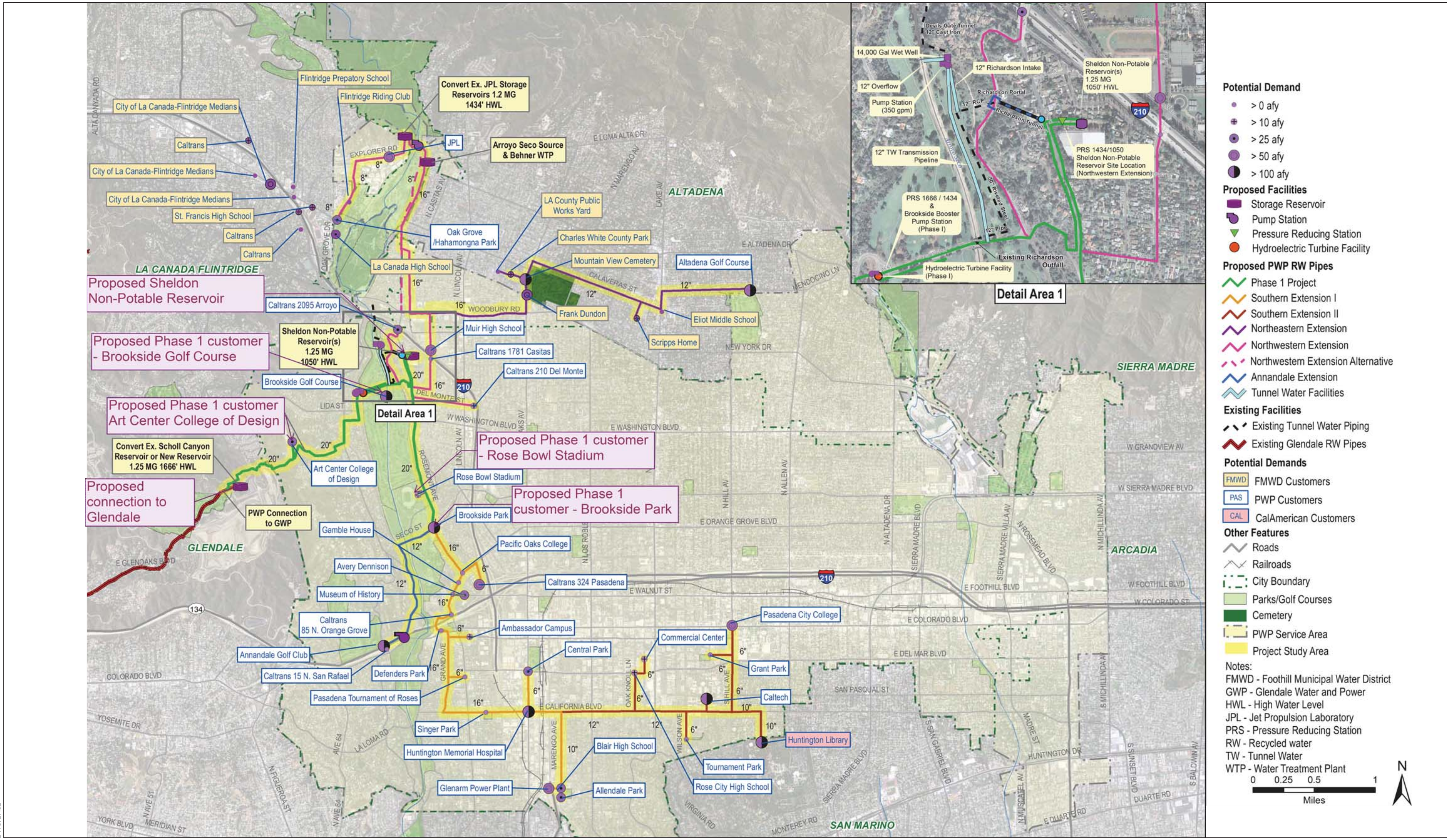

SOURCE: RMC, 2018

Glendale 2017 Wastewater Change Petition WW0097 Project

Figure A-6
Place of Use – PWP Service Area

ESA

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E. DESCRIPTION OF THE PROPOSED PROJECT

1. Reason for Proposed Change

Glendale is proposing to continue to implement its recycled water reuse program and sell recycled water to Pasadena in order to increase local water supply reliability and maximize the use of recycled water consistent with state law and policy including, but not limited to Water Code sections 461, 13500 et seq., and 13575 et seq., Government Code section 65601 et seq., the SWRCB's Recycled Water Policy, and the Executive Order issued by the Governor on April 25, 2014.

The SWRCB has set a goal of increasing the use of recycled water over 2002 levels by at least one million AFY by 2020 and by at least two million AFY by 2030. Included in its conservation goals is to substitute as much recycled water for potable water as possible by 2030. "The purpose of the [Board's Recycled Water Policy] is to increase the use of recycled water from municipal wastewater sources…." (SWRCB, Recycled Water Policy, (Jan. 22, 2013), pp. 1-2, available at http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2013/rs2013_0003_a.pdf.)

2. Project Components

a. Wastewater Reuse and Discharge Reductions

As noted above, the City of Glendale and City of Los Angeles jointly own LAGWRP located at 4600 Colorado Boulevard in the City of Los Angeles, California, though the City of Los Angeles has the sole responsibility of operating and maintaining the facility. Most of the water treated at LAGWRP originated as imported water from the Metropolitan Water District.[12]. Pursuant to its Wastewater Change Petition WW0097, the City of Glendale is proposing the sale of additional recycled water to customers within the Upper Los Angeles River Area (ULARA), which would reduce the City's discharge of treated water to the River. This proposed change itself will not require the construction of additional facilities or grading-related activity, though as noted previously the project involves construction of new recycled water distribution facilities (i.e., pipelines and pump stations) within the City of Glendale.[13] In addition, in order to accommodate the additional recycled water flow to the PWP recycled water system, an additional pump would ultimately need to be installed at LAGWRP; however, the pump building and connection point already exist at LAGWRP for this purpose and thus no construction activity would be required. Glendale will continue to discharge treated water at the same point of diversion, but in lesser quantities, as summarized below in **Table A-1**, *Existing and Proposed LAGWRP Discharges*.

[12] *Wastewater flows discharged from the LAGWRP, therefore, are considered developed water supplies and not available for appropriation by others. (See City of Los Angeles v. City of San Fernando (1975) 14 Cal.3d 199, 259-62; see also City of Los Angeles v. City of Burbank (1943) 23 Cal.2d 68, 76.) Glendale has not, and does not, abandon any wastewater flows generated from its importation of water and/or treatment at the LAGWRP. Accordingly, Glendale's proposed change in purpose of use or place of use will not impact any legal user of water.*

[13] *The proposed project involves the reduction in discharges of recycled water to the River, as a result of delivery of additional recycled water within the GWP and PWP service areas, as well as construction of new distribution facilities within the GWP service area. While the expanded delivery of recycled water is the subject of this Initial Study, the construction and operation of recycled water facilities within the PWP service area were the subject of the Pasadena Non-Potable Water Project EIR, which was certified by the Pasadena City Council in 2016.*

TABLE A-1
EXISTING AND PROPOSED LAGWRP DISCHARGES

	million gallons per day (mgd)												Acre-Feet (AF)
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual**
Present:	11.89	10.19	10.24	8.79	8.04	7.37	7.12	8.08	9.03	9.49	9.88	11.20	10,500
Proposed:	10.98	8.97	8.78	5.91	4.07	2.44	1.27	2.85	4.70	6.49	7.87	10.15	7,000
Change:	*0.91*	*1.22*	*1.46*	*2.88*	*3.97*	*4.93*	*5.85*	*5.23*	*4.33*	*3.00*	*2.01*	*1.05*	*3,500*

Source: City of Glendale, 2017

Pursuant to guidelines established by the California Department of Public Health and the LARWQCB, as discussed in further detail in Appendix A of this Initial Study, LAGWRP treats effluent to a quality sufficient for discharge into the Los Angeles River. Under current conditions, that discharge is released through a point of discharge adjacent to LAGWRP directly into the River. The location of the discharge point is shown above in Figures A-2 (aerial photo) and A-3 (discharge location photos).

As summarized in Table A-1, LAGWRP discharged 10,500 AF to the River in 2017. As a result of increased demand for recycled water within the GWP and PWP service areas, the City is proposing to gradually increase its use of recycled water (from approximately 2,000 AF to approximately 5,500 AF), thereby reducing its discharge of treated wastewater into the channel over the next ten years from 10,500 AF to approximately 7,000 AF.

In addition to the Glendale's own potential re-use of this water, other water agencies and private parties have expressed an interest in obtaining recycled water from LAGWRP for further beneficial uses, including most notably the City of Pasadena. Recycled water conveyed to these agencies (and/or private parties) would be used to meet additional recycled water demands within the ULARA and adjacent portions of the GWP and PWP service areas. The re-use of Glendale's recycled water will reduce demand for imported water. The proposed Wastewater Change Petition is thus consistent with the Executive Order issued by Governor Brown on April 25, 2014, wherein the Governor ordered that those with surplus recycled water attempt to deliver that water to areas in need, and that the State Water Resources Control Board prioritize and expedite processing of recycled water projects.

b. Recycled Water Distribution Facilities (GWP Service Area Only)

The proposed project includes the construction and operation of three new pipelines and pump stations to serve future recycled water users in the City of Glendale. As noted previously, the construction and operation of new recycled water distribution facilities within the PWP service area, the recycled water supply for which would be provided by the proposed project, were evaluated in the Pasadena Non-Potable Water Project EIR, which was certified by the Pasadena City Council in 2016. As such, only those new facilities within the GWP service area are addressed in this Initial Study. The City of Glendale's proposed recycled water distribution facilities are described as follows and are illustrated above in Figures A-2 (aerial photo) and A-5 (GWP place of use):

1. **Glendale Tee (*Total Recycled Water Demand: 50 AFY*) –** Extend current recycled system by installing approximately 10,030 linear feet of 8-inch polyvinyl chloride (PVC) pipeline from Colorado Street along Central Avenue and connecting (loop) the Brand Park and Verdugo Scholl recycled water pipelines via

Glenoaks Boulevard in order to provide recycled water to dual-plumbed office buildings for toilet flushing and to provide landscape irrigation water for commercial buildings in the downtown area of Glendale.

2. **Chevy Chase Country Club (*Total Recycled Water Demand: 100 AFY*) –** Install a pump station and 7,920 linear feet of 8-inch PVC pipeline in Chevy Chase Drive and up Chevy Chase Canyon from Holly Drive to Golf Club Drive.

3. **Chevy Oaks/Camino San Rafael Homes Recycled Water (*Total Recycled Water Demand: 125 AFY*)** – This improvement consists of installing approximately 5,440 feet of 8-inch PVC pipeline and two booster pumps stations. It would connect to the Chevy Chase Country Club pipeline and then extend Glendale's recycled water distribution system to provide recycled water for common area irrigation to the Chevy Oaks and Camino San Rafael residential neighborhoods.

F. CONSTRUCTION METHODS AND ASSUMPTIONS

No construction activities regarding the reduced discharges from LAGWRP to the River would be necessary. However, construction of the new recycled water distribution facilities within the GWP service area described above would involve open-trench construction within existing street rights-of-way and other developed or disturbed public property. Only one improvement would be constructed at any given time, and thus it is anticipated that only one construction crew would be active throughout project construction activities. Pipeline construction, staging, and other active construction-related activities would all occur within the public right-of-way, while construction worker parking, stockpiling, and equipment and material deliveries would occur at existing GWP facilities or other City property. Up to five vendor truck deliveries per day are expected to occur at the active construction site.

The proposed improvements would require up to 20 construction workers on any given day, and take up to 160 work days to complete. Specifically, the Glendale Tee improvements are expected to require up to 20 workers and a total of 160 construction work days, while both the Chevy Chase Country Club and Chevy Oaks/Camino San Rafael Homes improvements would require up to 10 workers and 130 work days to complete. Construction activities would only occur Monday through Friday during daytime hours, with no construction activities occurring at night or on weekends or holidays. Pipeline construction would require excavation of a trench approximately two to five feet wide and between four and ten feet deep along the entire length of each pipeline alignment. The three pump stations would be constructed below-grade adjacent to street rights-of-way (see Figures A-2 and A-5 above), and would require excavation of an area approximately 40 feet by 40 feet with depths of up to 10 feet below existing grade. Once constructed, streets would be repaved/restored to pre-project conditions, and all proposed facilities would operate passively below-grade.

Project-related grading would result in the need for between 2,800 and 4,200 cubic yards (cy) of soil export, and between 2,400 and 3,900 cy of soil import, some of which may be balanced on-site where feasible and appropriate. Construction equipment is anticipated to include the following for each phase of construction:

- Phase 1 (Mobilization): flatbed truck, lowboy truck/trailer.
- Phase 2 (Pavement Cutting): pavement saw, pick-up truck.
- Phase 3 (Excavation, Pipe laying, Backfilling): air compressor, backhoe, dump truck, excavator, forklift, generator, mechanic truck, pick-up truck, welding truck.

- Phase 4 (Paving): grinding machine, paving machine, steam roller
- Phase 5 (Pump Stations): dump truck, excavator, pick-up truck, crane, cement truck.
- Phase 6 (De-mobilization): flatbed truck, lowboy truck/trailer, street sweeper.

None of the proposed construction phases are anticipated to overlap, as each would be completed sequentially as funding is secured.

G. PROJECT SCHEDULE

Implementation of the proposed project will occur as new improvements are constructed and additional recycled water users within both the GWP and PWP service areas receive new connections. Construction of the first phase of improvements is anticipated to commence in 2018 while the final phase of construction is expected to occur in 2028.

H. NECESSARY APPROVALS

Approvals required for implementation of the proposed project include, but are not limited to, the following:

- City of Glendale – Adoption of Mitigated Negative Declaration
- California State Water Resources Control Board – Approval of Wastewater Change Petition WW0097
- Los Angeles Regional Water Quality Control Board – Approval of Stormwater Pollution Prevention Plan (SWPPP) for construction activities

Attachment B
Explanation of Checklist Determinations

ATTACHMENT B - EXPLANATION OF CHECKLIST DETERMINATIONS

I. AESTHETICS

Would the project:

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

Construction

Less Than Significant Impact. The proposed project includes a reduction in wastewater discharges from the Los Angeles-Glendale Water Reclamation Plant (LAGWRP) to the Los Angeles River (River) to support increased application of recycled water in the Glendale Water & Power (GWP) and the Pasadena Water & Power (PWP) service areas, construction and operation of three new recycled water distribution pipelines and associated pump stations within the City of Glendale (or Glendale), and a pipeline connection to Pasadena's recycled water distribution system . The construction and operation of Pasadena's recycled water system improvements, as well as the application of recycled water within the PWP service area, were previously evaluated in the certified Pasadena Non-Potable Water Project Environmental Impact Report (EIR).[1] No construction activities regarding the wastewater reuse and discharge reductions from LAGWRP to the River would be necessary. However, construction of the proposed recycled water distribution facilities (i.e., the Glendale Tee, the Chevy Chase Country Club, and the Chevy Oaks/Camino San Rafael Homes Recycled Water) within the GWP service area would involve open-trench construction within existing street rights-of-way and other developed or disturbed public property. The proposed Glendale Tee facility is located within an urbanized area surrounded by residential uses, commercial uses, office uses, and recreational facilities. The proposed Chevy Chase Country Club and Chevy Oaks/Camino San Rafael Homes Recycled Water facilities are surrounded by residential uses and open space areas including the Chevy Chase Canyon and the San Rafael Hills. Given the sloping topography of the area of the proposed Chevy Chase Country Club and the Chevy Oaks/Camino San Rafael Homes Recycled Water facilities, as well as the availability of panoramic views along these two proposed alignments and pump station locations, a number of scenic vistas are located within the viewshed of this project area. However, despite the presence of scenic vistas that would be accessible from this project area, either from existing street rights-of-way or other public property through which these two recycled water distribution facilities would be located and traverse, project construction of these recycled water distribution facilities, including the proposed Glendale Tee, would be located entirely underground throughout the proposed alignments and pump station locations. Pipeline construction would require excavation of a trench approximately two to five feet wide and between four and ten feet deep along the entire length of each pipeline alignment. The three pump stations would be constructed below-grade adjacent to street rights-of-way, and would require excavation of an area approximately 40 feet by 40 feet with depths of up to 10 feet below existing grade. While short-term construction activities could have the potential to temporarily obstruct or detract from views of scenic resources in the area, such impacts would only occur for a limited time in any one location such that any adverse effects would be of short duration. Only one improvement would be constructed at any given time, and thus it is anticipated that only one construction crew would be active throughout project construction activities. Pipeline construction, staging, and other active construction-related activities would all occur within the public right-of-way, while construction

[1] [1] *City of Pasadena. Pasadena Non-Potable Water Project Draft Environmental Impact Report. SCH #2014081091. June 2015. The Final EIR for the project was certified on February 22, 2016 by the Pasadena City Council.*

worker parking, stockpiling, and equipment and material deliveries would occur at existing GWP facilities or other City property. Up to five vendor truck deliveries per day are expected to occur at the active construction site. Furthermore, upon completion of construction activities along a given pipeline section or pump station location, the streets would be repaved/restored to pre-project conditions. As such, impacts to scenic vistas resulting from construction of the proposed project would be less than significant.

Operation

Less Than Significant Impact. The proposed project includes a reduction in wastewater discharges from the LAGWRP to the River to support increased application of recycled water in the GWP and PWP service areas, construction and operation of three new recycled water distribution pipelines and associated pump stations within the City of Glendale, and a pipeline connection to Pasadena's recycled water distribution system. The City of Glendale will continue to discharge treated water at the same point of diversion, but in lesser quantities. While no portion of the project site or LAGWRP contains a scenic vista of valued scenic resource, portions of the River might be considered a scenic resource as viewed from a public right-of-way, including the Glendale Narrows portion of the River through Griffith Park or other viewpoints in the area such as those available from trails within Griffith Park to the west and south of the River. Despite the conservative assumption that certain portions of the River might be a visually prominent feature when viewed from surrounding publicly available vantage points, implementation of the proposed project would have no measurable effect on the scenic value of the River. This is due to the fact that, as further discussed below under Section IX, Hydrology and Water Quality, the proposed reductions in wastewater discharges from LAGWRP would not result in notable reductions in flow volumes and associated water levels in the River, such that a discernible change in the visual characteristics of this feature would occur. Similarly, as discussed in Section IV, Biological Resources, below, the proposed flow reductions would not result in significant adverse effects on instream habitat downstream of the point of discharge such that visible reduction in vegetation or other visible features of the River would occur. With regard to the proposed recycled water distribution facilities, once constructed, streets would be repaved/restored to pre-project conditions and all proposed facilities would operate passively below-grade. As such, impacts to scenic vistas resulting from operation of the proposed project would be less than significant.

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

Construction

Less Than Significant Impact. No construction activities regarding the wastewater reuse and discharge reductions from LAGWRP to the River would be necessary. However, project implementation would require the construction of the proposed recycled water distribution facilities. The area of the proposed Glendale Tee facility is entirely urbanized with little to no vegetation, and no scenic resources including trees, rock outcroppings, or historic buildings. The proposed Chevy Chase Country Club and Chevy Oaks/Camino San Rafael Homes Recycled Water facilities are located within the area of the Chevy Chase Canyon and the San Rafael Hills, which may both be considered scenic resources as viewed from a public right-of-way. As discussed above, despite the presence of scenic resources within the project area, project construction of all three proposed recycled water distribution facilities would be located entirely underground throughout the proposed alignments and pump station locations. Thus, although temporary construction activities in proximity or within the viewshed of scenic resources could adversely detract from or obstruct views of such resources, impacts in this regard would not be substantial given that such effects would be short-term in nature and would only occur in the immediate vicinity of construction activities in a given location for a limited time. Furthermore, upon completion of construction activities along a given pipeline section or pump station location, the streets would be repaved/restored to pre-project conditions. Therefore, less than significant impacts to scenic resources would result from construction of the proposed project.

Operation

Less Than Significant Impact. The project site includes the entire GWP and PWP service areas within the Cities of Glendale and Pasadena, as well as adjacent portions of the City of San Marino, City of Los Angeles, City of La Canada-Flintridge, and unincorporated Los Angeles County community of Altadena. The project site is mostly urbanized with little to no vegetation, no rock outcroppings, and no historic buildings (including those within a state scenic highway) occur on-site. As discussed above, the proposed project would incrementally reduce wastewater discharges from LAGWRP to the River, portions of which might be considered a valued scenic resource. Nonetheless, as also discussed above, the proposed reductions in discharges to the River are not expected to result in measurable changes to the appearance of the River, as flow reductions and related effects on water levels and vegetation would be nominal and not noticeable to viewers. As such, while the proposed project would incrementally reduce discharges of treated effluent to the River, its implementation would not substantially damage scenic resources in the project area, including the River as viewed from surrounding locations. With regard to the proposed recycled water distribution facilities, once constructed, streets would be repaved/restored to pre-project conditions and all proposed facilities would operate passively below-grade. Therefore, less than significant impacts to scenic resources would result from operation of the proposed project.

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

Construction

Less Than Significant Impact. As discussed above, project construction of the proposed recycled water distribution facilities would be located entirely underground throughout the proposed alignments and pump station locations. Visual impacts to the project site and surrounding community would occur temporarily during the construction phase, and would only occur for a limited time in any one location. Because the proposed recycled water distribution facilities would be placed underground, and the ground surface features returned to pre-project conditions, construction of the project would not affect the visual character of the community in the vicinity of the project. Therefore, construction impacts to the visual character of the surrounding area would be less than significant.

Operation

Less Than Significant Impact. As discussed in Responses I.a. and I.b. above, both the wastewater reuse and discharge reductions and application of recycled water within the project site would not result in visible changes to the project area, and thus the operation of the proposed project would result in less than significant impacts to visual character or quality. Further, the proposed project would not measurably reduce the flow levels or vegetation within the River, and does not involve any other physical changes to the environment such that its implementation could substantially adversely affect visual resources on- or off-site. As noted previously, the project site and LAGWRP is mostly urbanized and lacks any valued scenic resources, while portions of the River, located downstream of the project site, may be considered a valued scenic resource. However, given the minimal effect of the proposed wastewater reuse and discharge reductions on the River's water levels and associated ability to support vegetation, it is anticipated that the reduced flows in the River will not have the potential to substantially degrade the visual character or quality of the project site and its surroundings. With regard to the proposed recycled water distribution facilities, once constructed, streets would be repaved/restored to pre-project conditions and all proposed facilities would operate passively below-grade and would not affect the visual character of the community in the vicinity of the project. Impacts in this regard would be less than significant.

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

Construction

Less Than Significant Impact. External and internal night and day illumination is already in place within the project area, which is mainly associated with the urbanized area, as well as vehicle headlights, which constitute the majority of light and glare sources in close proximity to proposed recycled water distribution facilities. Project construction of the proposed recycled water distribution facilities would be located entirely underground throughout the proposed alignments and pump station locations. The construction phase would be temporary and activities would generally only occur during daylight hours. However, traffic control and safety measures, such as barriers, reflective signs, and flashing warnings would be implemented, as necessary, and could introduce sources of light and/or glare into the surrounding area, but only on a temporary basis during construction. As such, construction impacts in this regard would be less than significant.

Operation

No Impact. The project site includes the entire GWP and PWP service areas within the Cities of Glendale and Pasadena, as well as adjacent portions of the City of San Marino, City of Los Angeles, City of La Canada-Flintridge, and unincorporated Los Angeles County community of Altadena. The project does not propose development or change in current operations beyond that requested in the City's 2017 Wastewater Change Petition WW0097. This project component would not create a new source of substantial light or glare which would adversely affect the day or nighttime views in the area, as the proposed project would only result in the reduction in wastewater reuse and discharge reductions and the increased application of recycled water for irrigation and other non-potable uses. With regard to the proposed recycled water distribution facilities, once constructed, streets would be repaved/restored to pre-project conditions and all proposed facilities would operate passively below-grade. As such, no operation impacts would occur in this regard.

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 of and the Forest Legacy Assessment Project; and forest carbon measurements 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?

No Impact. The project site includes the GWP and PWP recycled water service areas within the Cities of Glendale and Pasadena, as well as adjacent portions of the City of San Marino, City of Los Angeles, City of La Canada-Flintridge, and unincorporated Los Angeles County community of Altadena. The locations of the proposed recycled water distribution facilities are currently developed within existing street rights-of-way and other developed or disturbed public property. The proposed Glendale Tee facility is located within an urbanized area surrounded by residential uses, commercial uses, office uses, and recreational facilities. The proposed Chevy Chase Country Club and Chevy Oaks/Camino San Rafael Homes Recycled Water facilities are surrounded by residential uses and open space areas including the Chevy Chase Canyon and the San Rafael Hills. No agricultural uses or related operations are present within the site or surrounding area. No portion of the project site is located on designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program.[2] While the General Plan land use designations and zoning designations within the project site vary substantially, it is important to note that among the existing and anticipated future users of recycled water produced at LAGWRP with the highest recycled water demands include Industrial uses (e.g., Grayson Power Plant), Institutional uses (e.g., public schools including Keppel Elementary School, Toll Middle School, and Herbert Hoover High School), Public Park/Open Space/Recreation uses (e.g., various public parks, Chevy Chase Golf Course), and residential uses (e.g., Chevy Oaks Homes and Chevy Oaks/Camino San Rafael Homes). The various General Plans do not identify the project site as an area designated for agriculture use. Therefore, the proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses. As such, no construction or operation impacts would occur in this regard.

b. Conflict with existing zoning for agricultural use, or a Williamson Act Contract?

No Impact. As discussed above, project site includes the GWP and PWP recycled water service areas within the Cities of Glendale and Pasadena, as well as adjacent portions of the City of San Marino, City of Los Angeles, City of La Canada-Flintridge, and unincorporated Los Angeles County community of Altadena. The locations of the proposed recycled water distribution facilities are currently developed within existing street rights-of-way and other developed or disturbed public property. No agricultural zoning is present within the project site and no portion of the site is enrolled in a Williamson Act contract. As such, the proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract and no construction or operation impacts would occur in this regard.

c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 1220(g)), timberland (as defined by Public Resources Code

[2] *State of California Department of Conservation, California Important Farmland Finder, https://maps.conservation.ca.gov/dlrp/ciff/, accessed January 2017.*

section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

No Impact. As noted in Response II.b., above, the project site's existing zoning designations do not include agricultural or forestry-related uses or activities. No forest land or timberland zoning is present on the project site or in the surrounding area. As such, the proposed project would not have the potential to conflict with existing zoning for forest land or timberland and no construction or operation impacts would occur in this regard.

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

No Impact. No forest land exists on the project site or in the surrounding area. The proposed project includes a reduction in wastewater discharges from the LAGWRP to the River to support increased application of recycled water in the GWP and PWP service areas, construction and operation of three new recycled water distribution pipelines and associated pump stations within the City of Glendale, and a pipeline connection to Pasadena's recycled water distribution system. The proposed project would not have the potential to affect forest land. As such, the proposed project would not result in the loss of forest land or conversion of forest land to non-forest use and no construction or operation impacts would occur in this regard.

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 includes a reduction in wastewater discharges from the LAGWRP to the River to support increased application of recycled water in the GWP and PWP service areas, construction and operation of three new recycled water distribution pipelines and associated pump stations within the City of Glendale, and a pipeline connection to Pasadena's recycled water distribution system. Since there are no agricultural uses or related operations on or near the project site, the proposed project would not involve the conversion of farmland to other uses, either directly or indirectly. No construction or operation impacts to farmland or agricultural uses would occur.

III. AIR QUALITY

The following impact analysis pertaining to air quality is based, in part, from air quality modeling prepared by ESA in January 2018 and included as Appendix A.

Where available, the significance criteria established by the South Coast Air Quality Management District (SCAQMD) or air quality management plan may be relied upon to make the following determinations. Would the project:

a. Conflict with or obstruct implementation of the applicable air quality plan?

The project site is located within the South Coast Air Basin (Basin). Air quality planning for the Basin is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The proposed project would be subject to the SCAQMD's Air Quality Management Plan (AQMP), which contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving ambient air quality standards. These strategies are developed, in part, based on regional population, housing, and employment projections prepared by the Southern California Association of Governments (SCAG).

The 2012 AQMP was prepared to accommodate growth, reduce the high levels of pollutants within the areas under the jurisdiction of SCAQMD, return clean air to the region, and minimize the impact on the economy. Projects that are consistent with the assumptions used in the AQMP do not interfere with attainment because the growth is included in the projections utilized in the formulation of the AQMP. Thus, projects, uses, and activities that are consistent with the applicable growth projections and control strategies used in the development of the AQMP would not jeopardize attainment of the air quality levels identified in the AQMP, even if it would individually exceed the SCAQMD's numeric indicators.

The SCAQMD released the Draft 2016 AQMP on June 30, 2016 for public review and comment. A revised Draft 2016 AQMP was released in October 2016 and the SCAQMD Governing Board adopted the 2016 AQMP on March 3, 2017 (SCAQMD 2016). CARB approved the 2016 AQMP on March 23, 2017. USEPA approval is pending and is a necessary requirement before the 2016 AQMP can be incorporated into the SIP. Key elements of the 2016 AQMP include implementing fair-share emissions reductions strategies at the federal, state, and local levels; establishing partnerships, funding, and incentives to accelerate deployment of zero and near-zero-emissions technologies; and taking credit from co-benefits for greenhouse gas (GHG), energy, transportation and other planning efforts. The strategies included in the 2016 AQMP are intended to demonstrate attainment of the National Ambient Air Quality Standards (NAAQS) for the federal O_3 and PM2.5 standards. Until such time as the 2016 AQMP is approved by the USEPA, the 2012 AQMP remains the applicable AQMP. Nonetheless, the proposed project would be consistent with the 2016 AQMP, as the project does not involve the construction or operation of active land uses that could exceed the SCAG regional population, housing, and employment projections that are assumed in the AQMP.

Construction

Less Than Significant Impact. Construction activities associated with the proposed project have the potential to generate temporary criteria pollutant emissions through the use of heavy-duty construction equipment and through vehicle trips generated from worker trips and vendor and haul trucks traveling to and from the proposed project area. In addition, fugitive dust emissions would result from demolition and various soil-handling activities. Mobile source emissions, primarily oxides of nitrogen (NO_X), would result from the use of construction equipment such as excavators, forklifts, and cranes. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of construction activity, and prevailing weather conditions. The assessment of construction air quality impacts considers each of these potential sources.

Under this criterion, the SCAQMD recommends that lead agencies demonstrate that a project would not directly obstruct implementation of an applicable air quality plan and that a project be consistent with the assumptions (typically land-use related, such as resultant employment or residential units) upon which the air quality plan is based. The proposed project would result in an increase in short-term employment compared to existing conditions. Being relatively small in number (maximally 20 workers per day) and temporary in nature, construction jobs under the proposed project would not conflict with the long-term employment projections upon which the AQMP is based. Control strategies in the AQMP, potentially applicable to control temporary emissions from construction activities, include ONRD-04 and OFFRD-01,[3] which are intended to reduce emissions from on-road and off-road heavy-duty vehicles and equipment by accelerating the replacement of older, emissions-prone engines with newer engines that meet more stringent emission standards. In accordance with such strategies, the proposed project would comply with state regulations to reduce emissions from heavy-duty equipment including the California Air Resources Board (CARB) Air Toxics Control Measure (ATCM) that limits diesel powered equipment and vehicle idling to no more than five minutes at a location. The proposed project would also comply with SCAQMD regulations for controlling fugitive dust pursuant to SCAQMD Rule 403 (Fugitive Dust).

Compliance with these requirements is consistent with and meets or exceeds the AQMP requirements for control strategies intended to reduce emissions from construction equipment and activities. Because the proposed project would not conflict with the control strategies intended to reduce emissions from construction equipment, the project would not conflict with or obstruct implementation of the AQMP, and construction impacts would be less than significant.

Operation

Less Than Significant Impact. Operations of the pump stations would require occasional maintenance and would not occur daily. Maintenance vehicles traveling to and from pump stations would be the only source of criteria pollutant emissions during operations. Based on the sporadic and short-term nature of these emissions, impacts from project operations would be less than significant.

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

As indicated above, the project site is located within the South Coast Air Basin, which is characterized by relatively poor air quality. State and federal air quality standards are often exceeded in many parts of the Basin, including those monitoring stations nearest to the proposed project's location. The proposed project would contribute to local and regional air pollutant emissions during construction (short-term or temporary) and project operations (long-term). However, based on the following analysis, construction and operation of the proposed project would result in less than significant impacts relative to the daily significance thresholds for criteria air pollutant emissions established by the SCAQMD for construction and operational phases.[4]

Construction

Less Than Significant Impact. Based on criteria set forth in the SCAQMD CEQA Air Quality Handbook, a project would have the potential to violate an air quality standard or contribute substantially to an existing violation and result in a significant impact with regard to construction emissions if regional emissions from

[3] *AQMP measure ONRD-04 applies to on-road mobile sources and is the accelerated retirement of older on-road heavy-duty vehicles to reduce emissions of NO_X and particulate matter. AQMP measure OFFRD-01 applies to off-road mobile sources and is the extension of the Surplus Off-Road Opt-In for NO_X (SOON) provision for construction/industrial equipment to encourage the accelerated retirement of older off-road heavy-duty equipment to reduce emissions of NO_X. http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2012-air-quality-management-plan/final-2012-aqmp-(february-2013)/chapter-4-final-2012.pdf. Accessed October 2017.*

[4] *South Coast Air Quality Management District, Air Quality Significance Thresholds, (March 2015), http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2. Accessed December 2017.*

both direct and indirect sources would exceed any of the following SCAQMD prescribed threshold levels: (1) 75 pounds a day for volatile organic compounds (VOCs), (2) 100 pounds per day for nitrogen oxides (NO_X), (3) 550 pounds per day for carbon monoxide (CO), (4) 150 pounds per day for sulfur oxides (SO_X), (5) 150 pounds per day for respirable particulate matter (PM10), and (6) 55 pounds per day for fine particulate matter (PM2.5).[5]

The proposed project consists of the consecutive construction of three pipe alignments: Glendale Tee (Phase 1), Chevy Chase Country Club (Phase 2), and Chevy Oaks/Camino San Rafael Homes Recycled Water (Phase 3). Construction of the proposed project is estimated to last approximately 21 months. Construction of the proposed project has the potential to generate temporary criteria pollutant emissions through the use of heavy-duty construction equipment, such as excavators and forklifts, and through vehicle trips generated from worker, vendor, and haul truck trips traveling to and from the project site. In addition, fugitive dust emissions would result from demolition and various soil-handling activities. Mobile source emissions, primarily NO_X, would result from the use of construction equipment such as excavators and forklifts. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of construction activity, and prevailing weather conditions. The assessment of construction air quality impacts considers each of these potential sources.

Daily regional emissions during construction are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the mobile source and fugitive dust emissions factors. The emissions are estimated using the California Emissions Estimator Model (CalEEMod, Version 2016.3.2) software, an emissions inventory software program recommended by the SCAQMD. CalEEMod is based on outputs from OFFROAD and EMFAC, which are emissions estimation models developed by CARB and used to calculate emissions from construction activities, including on-and off-road vehicles. The input values used in the CalEEMod modeling analysis were adjusted based on construction equipment and schedule information provided by the client. These values were then applied to the construction phasing assumptions used in the criteria pollutant analysis to generate criteria pollutant emissions values for each construction activity. Detailed construction equipment lists, construction scheduling, and emissions calculations are provided in Appendix A.

The maximum daily regional emissions from these activities are estimated by construction phase and compared to the SCAQMD significance thresholds in **Table III-1**, *Maximum Regional Construction Emissions.* Under the assumed scenarios, emissions resulting from the project construction would not exceed any criteria pollutant thresholds established by the SCAQMD. Therefore, construction impacts would be considered less than significant.

Operation

Less Than Significant Impact. As previously discussed, the proposed project would have minimal emissions of criteria pollutions from maintenance vehicles traveling to pump stations during project operations. The maintenance trips would be on an as needed basis and would not occur daily. Therefore, impacts from project operations would be less than significant.

5 *South Coast Air Quality Management District, Air Quality Significance Thresholds, (March 2015), http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2. Accessed December 2017.*

TABLE III-1
MAXIMUM REGIONAL CONSTRUCTION EMISSIONS (POUNDS PER DAY) [A]

Source	VOC	NO_X	CO	SO_2	PM10 [b]	PM2.5 [b]
Phase 1 Mobilization	<1	2	2	<1	1	<1
Phase 1 Pavement Cutting	1	8	7	<1	1	1
Phase 1 Excavation, Pipe Laying, Backfill	4	31	29	<1	2	2
Phase 1 Paving	1	11	11	<1	1	1
Phase 1 De-mobilization	1	5	4	<1	1	<1
Phase 2 Mobilization	<1	2	1	<1	<1	<1
Phase 2 Pavement Cutting	1	8	6	<1	1	1
Phase 2 Excavation, Pipe Laying, Backfill	4	32	28	<1	2	2
Phase 2 Paving	1	10	10	<1	1	1
Phase 2 Pump Station	1	10	7	<1	1	<1
Phase 2 De-mobilization	<1	4	3	<1	1	<1
Phase 3 Mobilization	<1	2	1	<1	<1	<1
Phase 3 Pavement Cutting	1	7	5	<1	1	1
Phase 3 Excavation, Pipe Laying, Backfill	3	31	29	<1	2	2
Phase 3 Paving	1	10	10	<1	1	1
Phase 3 Pump Station	1	10	7	<1	1	<1
Phase 3 De-mobilization	<1	4	3	<1	1	<1
Daily Maximum Emissions	4	32	29	<1	2	2
SCAQMD Regional Threshold	75	100	550	150	150	55
Above/(Under)	(71)	(68)	(521)	(150)	(148)	(53)
Exceeds Threshold?	No	No	No	No	No	No

a Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix A.
b Emissions include fugitive dust control measures consistent with SCAQMD Rule 403.

Source: ESA, 2017

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 result in the emission of criteria pollutants during construction and operation for which the proposed project area is in non-attainment. A significant impact may occur if a project would add a cumulatively considerable contribution of a federal or state non-attainment pollutant. The Air Basin is currently in non-attainment for ozone, PM10, and PM2.5.

There are a number of related projects in the project area that have not yet been built or are currently under construction. Since the Applicant has no control over the timing or sequencing of the related projects, any quantitative analysis to ascertain daily construction emissions that assumes multiple, concurrent construction projects would be speculative. The SCAQMD recommends that project-specific construction air quality impacts be used to determine the potential cumulative impacts to regional air quality.

With regard to project operations, SCAQMD's approach for assessing cumulative impacts related to operations or long-term implementation is based on attainment of ambient air quality standards in accordance with the requirements of the federal and State Clean Air Acts. As discussed earlier, the SCAQMD has developed a comprehensive plan, the AQMP, which addresses the region's cumulative air quality condition.

A significant impact may occur if a project would add a cumulatively considerable contribution of a federal or state non-attainment pollutant. Because the Los Angeles County portion of the Air Basin is currently in non-attainment for ozone, PM10, and PM2.5, related projects could exceed an air quality standard or contribute to an existing or projected air quality exceedance. Cumulative impacts to air quality are evaluated under two sets of thresholds for CEQA and the SCAQMD. In particular, Section 15064(h)(3) of the CEQA Guidelines provides guidance in determining the significance of cumulative impacts. Specifically, Section 15064(h)(3) states in part that:

> *A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem (e.g., water quality control plan, air quality plan, integrated waste management plan) within the geographic area in which the project is located. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency.*

For purposes of the cumulative air quality analysis with respect to CEQA Guidelines Section 15064(h)(3), the proposed project's incremental contribution to cumulative air quality impacts is determined based on compliance with the SCAQMD adopted 2012 AQMP. As previously stated, the proposed project would comply with and incorporate measures to reduce criteria pollutant emissions during construction. Also, construction jobs would be temporary and project operations would be carried out by current staff at Glendale Water and Power.

Nonetheless, SCAQMD no longer recommends relying solely upon consistency with the AQMP as an appropriate methodology for assessing cumulative air quality impacts. The SCAQMD recommends that project-specific air quality impacts be used to determine the potential cumulative impacts to regional air quality.

As displayed in Table III-1, regional emissions calculated for project construction would be less than the applicable SCAQMD daily significance thresholds, which are designed to assist the region in attaining the applicable State and national ambient air quality standards. These standards apply to both primary (criteria and precursor) and secondary pollutants (ozone). Although the project site is located in a region that is in non-attainment for ozone, PM10, and PM2.5, the emissions associated with the proposed project would not be cumulatively considerable as the emissions would fall below SCAQMD daily significance thresholds. In addition, the proposed project would be consistent with the AQMP, which is intended to bring the Basin into attainment for all criteria pollutants.

Compliance with applicable SCAQMD rules would ensure project construction health risks would be less than significant and related projects would also be required to comply with applicable rules as well as implement mitigation measures, as necessary under CEQA, to mitigate impacts to less than significant. As a result, the proposed project would not result in cumulatively considerable health impacts. Compliance with applicable rules would ensure that the proposed project and related projects would not result in cumulatively considerable odor impacts.

d. Expose sensitive receptors to substantial pollutant concentrations?

Certain population groups are especially sensitive to air pollution and should be given special consideration when evaluating potential air quality impacts. These population groups include children, the elderly, persons with pre-existing respiratory or cardiovascular illness, athletes, and others who engage in frequent exercise. As defined in the SCAQMD CEQA Air Quality Handbook, a sensitive receptor to air quality is defined as any of the following land use categories: (1) long-term health care facilities; (2) rehabilitation centers; (3) convalescent centers; (4) retirement homes; (5) residences; (6) schools; (7) parks and playgrounds; (8) child care centers; and (9) athletic fields.

The localized air quality analysis was conducted using the methodology described in the SCAQMD *Localized Significance Threshold Methodology* (June 2003, revised July 2008),[6] which relies on on-site mass emission rate screening tables and project-specific dispersion modeling typically for sites not greater than five acres, as appropriate (SCAQMD 2008). The localized significance thresholds (LSTs) are applicable to NO_X, CO, PM10, and PM2.5. For NO_X and CO, the thresholds are based on the ambient air quality standards. For PM10 and PM2.5, the thresholds are based on requirements in SCAQMD Rule 403 (Fugitive Dust) for construction. The SCAQMD has established screening criteria that can be used to determine the maximum allowable daily emissions that would satisfy the LSTs and therefore not cause or contribute to an exceedance of the applicable ambient air quality standards without project-specific dispersion modeling. The screening criteria depends on: (1) the area in which the project is located, (2) the size of the project area, and (3) the distance between the project area and the nearest sensitive receptor. SCAQMD's Methodology clearly states that "off-site mobile emissions from the project should not be included in the emissions compared to LSTs." Therefore, for purposes of the LST analysis, only emissions included in the CalEEMod "on-site" emissions outputs were considered, plus the truck idling emissions (e.g., haul trucks and vendor trucks) that were calculated separately using the EMFAC emission factors for heavy-heavy-duty (HHD) vehicles.

The nearest existing sensitive receptors to the project site are residential uses in the surrounding neighborhoods. According to the applicant, the proposed pipe would be installed at a maximum rate of 100 linear feet per day and would require a two-foot wide trench. This daily disturbance area would be less than one acre. Therefore, the LST used for the localized significance impact analysis were based on a one-acre site in the West San Gabriel Valley Source-Receptor Area (the City of Glendale is located within the West San Gabriel Valley Source-Receptor Area) with sensitive receptors located adjacent to the project site (i.e., 25 meters).

6 *South Coast Air Quality Management District, Localized Significance Thresholds, (2003, revised 2008), http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds. Accessed October 2017.*

Construction Emissions

Less Than Significant Impact. Table III-2, *Maximum Localized Construction Emissions,* identifies the localized impacts at the nearest receptor location in the vicinity of the project area. The localized emissions during construction activity would not exceed any of the SCAQMD's localized significance thresholds. Therefore, impacts would be considered less than significant.

TABLE III-2
MAXIMUM LOCALIZED CONSTRUCTION EMISSIONS (POUNDS PER DAY) [A]

Source	NO_X	CO	PM10	PM2.5
Phase 1 Mobilization	3	3	1	<1
Phase 1 Pavement Cutting	4	4	1	1
Phase 1 Excavation, Pipe Laying, Backfill	29	27	2	2
Phase 1 Paving	10	9	1	1
Phase 1 De-mobilization	3	2	<1	<1
Phase 2 Mobilization	2	2	<1	<1
Phase 2 Pavement Cutting	5	4	1	1
Phase 2 Excavation, Pipe Laying, Backfill	29	27	2	2
Phase 2 Paving	9	9	1	1
Phase 2 Pump Station	9	6	<1	<1
Phase 2 De-mobilization	3	2	<1	<1
Phase 3 Mobilization	2	1	<1	<1
Phase 3 Pavement Cutting	4	4	1	1
Phase 3 Excavation, Pipe Laying, Backfill	26	27	2	2
Phase 3 Paving	9	9	1	1
Phase 3 Pump Station	9	6	<1	<1
Phase 3 De-mobilization	3	2	<1	<1
Daily Maximum Emissions	**29**	**27**	**2**	**2**
SCAQMD Localized Significance Threshold[b]	69	535	4	3
Above/(Under)	(40)	(508)	(2)	(1)
Exceeds Threshold?	No	No	No	No

a Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix A.
b Localized Significance Thresholds (LST) were for a 1-acre project site with a 25-meter receptor distance.

Source: ESA, 2017
.

Operational Emissions

Less Than Significant Impact. As previously discussed, project operations would result in minimal criteria pollutant emissions from occasional maintenance vehicle trips traveling to pump stations. These trips would be sporadic and would not occur daily. Therefore, project operations would not result in a cumulatively considerable net increase for non-attainment pollutants or ozone precursors and would result in a less than significant impact for construction emissions.

Carbon Monoxide Hotspots

Less Than Significant Impact. A carbon monoxide (CO) hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. Project operations would emit minimal CO emissions from maintenance vehicles traveling to pump stations. Major roadways or intersections would not be impacted from project operations. Formation of CO hotspots and exceedances of the 1-hour an 8-hour CO federal and state standards are not expected. In summary, the proposed project would result in less than significant impacts with respect to CO hotspots.

Toxic Air Contaminants

Construction

Less Than Significant Impact. Intermittent construction activities associated with the proposed project would result in short-term emissions of diesel particulate matter, which the State has identified as a TAC. During construction, the exhaust of off-road heavy-duty diesel equipment would emit diesel particulate matter during general construction activities, such as site preparation excavation, installation of machinery, materials transport and handling, and building construction.

Diesel particulate matter poses a carcinogenic health risk that is generally measured using an exposure period of 30 years for sensitive residential receptors, according to the California Environmental Protection Agency, Office of Environmental Health Hazard Assessment (OEHHA) Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (OEHHA Guidance), which was updated in 2015 with new exposure parameters including age sensitivity factors. Sensitive receptors would be located to the north and west of the project area; however, localized diesel particulate matter emissions (strongly correlated with PM2.5 emissions) would be minimal and would be below localized thresholds as presented in Table III-2. Although the localized analysis does not directly measure health risk impacts, it does provide data that can be used to evaluate the potential to cause health risk impacts. Furthermore, construction activity would occur for a temporary and short-term duration at any one location as pipeline construction proceeds along a linear path. The low level of PM2.5 emissions coupled with the very short-term duration of construction activity at any one location and the relatively small-scale of the proposed project would result in an overall low level of diesel particulate matter concentrations in the project area. Furthermore, compliance with the CARB ATCM anti-idling measure, which limits idling to no more than five minutes at any location for diesel-fueled commercial vehicles, would further minimize diesel particulate matter emissions in the project area. The proposed project would utilize a construction contractor(s) that complies with required and applicable BACT and the In-Use Off-Road Diesel Vehicle Regulation. Thus, it is expected that sensitive receptors would be exposed to emissions below thresholds and construction TAC impacts would be less than significant.

Operation

Less Than Significant Impact. Project operations would generate minor amounts of diesel emissions from maintenance vehicles traveling to pump stations. Maintenance trips would occur on an as needed basis and would not occur daily. As a result, toxic or carcinogenic air pollutants are not expected to occur in substantial amounts in conjunction with operation of the proposed wastewater pipeline and pump stations. Project operations would not be considered a substantial source of diesel particulates and potential long-term operational impacts associated with the release of TACs would be minimal and would not be expected to exceed SCAQMD thresholds of significance. Therefore, impacts would be less than significant.

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

According to the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project does not include any uses identified by the SCAQMD as being associated with substantial odors.

Construction

Less Than Significant Impact. Potential activities that may emit odors during construction activities include the use of adhesives and paints, and the combustion of diesel fuel in on- and off-road equipment. The proposed project would comply with the applicable provisions of the CARB Air Toxics Control Measure regarding idling limitations for diesel trucks. Further, construction odor emissions would be temporary, short-term, and intermittent in nature and would cease upon completion of construction. Through adherence with mandatory compliance with SCAQMD Rules, no construction activities or materials are expected to create objectionable odors affecting a substantial number of people. Therefore, construction of the proposed project would result in less than significant impacts.

Operation

Less Than Significant Impact. According to the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project does not include any uses identified by SCAQMD as being associated with substantial odors. As a result, project operations are not expected to discharge contaminants into the air in quantities that would cause a nuisance, injury, or annoyance to the public or property pursuant to SCAQMD Rule 402. Therefore, the proposed project would not create adverse odors affecting a substantial number of people and impacts would be less than significant.

IV. BIOLOGICAL RESOURCES

The following impact analysis pertaining to biological resources is based on information contained in the *Glendale Water and Power Recycled Water Extension Projects Biological Resources Assessment,* prepared by ESA in March 2018 and included as Appendix B, as well as the *Hydraulic Modeling Report* prepared by ESA in March 2018 and included as Appendix E.

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 by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Construction

Less Than Significant Impact With Mitigation Incorporated.

The proposed pipelines and pump stations will be located in areas that are developed within urban land uses No special-status species are anticipated to occur within the construction zones. Therefore, no impacts will occur to candidate, sensitive, or special-status species during construction of the three pipelines and three pump stations.

Nesting Birds

Construction of pipelines and the pump station has the potential to remove landscaping shrubs and encroach or remove native trees that could provide nesting sites for migratory birds during the construction of the Chevy Oaks/Camino San Rafael Homes pipeline and of the three proposed pump stations. Birds, and their nesting sites, eggs, and young are protected from "take" by the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code Section 3500. Implementation of MM BIO-1 below that includes preconstruction surveys for nesting birds and avoidance of active nests, would ensure impacts to nesting birds are avoided.

Mitigation Measure

MM BIO-1: Prior to removal, trimming, or disturbance of vegetation that could be used as nesting habitat for birds during nesting season (typically February through August), a qualified biologist will conduct a preconstruction survey for nesting birds. If active nests are identified, the biologist will apply a no-work buffer around the nest at an appropriate distance that would insure no incidental take of the nest from the project. Typical buffer distances are 300 feet for songbirds and 500 feet for raptors, but the distance in the field will be determined by the biologist and will be based on the ambient conditions, type of work proposed and distance from the nest, and the species of bird that is nesting. The buffer may be considerably less than the typical 300 or 500 feet, at the discretion of the project biologist. The no-work buffer will remain in place until the biologist has determined the young have fledged and are no longer dependent on the nest site.

Operation

Less Than Significant Impact. A total of 15 special-status wildlife species are known to occur or have a high potential to occur in Segments 3-7 of the River (River segments are defined in Appendix B), including one reptile (two-striped garter snake), 11 bird species (Cooper's hawk, sharp-shinned hawk, Vaux's swift, white-tailed kite, American peregrine falcon, merlin, yellow-breasted chat, osprey, bank swallow, yellow warbler, and least Bell's vireo), and three bat species (western mastiff bat, hoary bat, and big free-tailed bat). The habitats for Segments 3-7 are summarized in **Table IV-1**, *Descriptions of Habitats and Existing Conditions within the Study Area,* below. No special-status fish or other aquatic species are known to occur in these segments of the channel. The potential effects of any hypothetical flow reduction to a river may include: (1) reductions in water depth and velocity that can affect aquatic habitat (e.g. changes in fish habitat or fish migration potential), (2) changes in wetted channel area that can affect aquatic habitat (e.g. changes in benthic macroinvertebrate productivity), and (3) changes in water level that can affect riparian habitat (e.g. declines in water level below tree root depths). The effects of the proposed project during the driest single month within the last eleven years include a flow depth reduction of less than half an inch (< 0.5-inch), a change in velocity of two percent (2%), and a shrinkage of wetted area during the summer months equivalent to a strip 14 inches wide along both banks (two percent [2%] of the existing wetted area along the River edges). During the winter and spring the proposed flow reductions would have much smaller effects. The proposed reduction in water surface elevation would not create new fish passage barriers or noticeably change habitat conditions, and would not have a detectable effect on riparian vegetation moisture availability. The effects are likely almost undetectable from a biological perspective.

The proposed project would reduce discharges to the River by 3,500 AFY (an approximate annual average of 4.8 cubic feet per second [cfs]). As analyzed in Appendix B of this Draft Initial Study, this reduction would reduce current flows by approximately 10.8 percent under worst-case conditions (the driest month of the driest year during the most recent 11 year study period). The riparian and aquatic habitats in the River channel would not be reduced by the reduced flow. As noted, above, the wetted channel would narrow slightly (by approximately 14 inches on either side of the River channel), but the riparian vegetation would not lose access to perennial flow due to the relative depths of the root systems and the anticipated water levels, and would not be reduced in acreage. The reduced flow would decrease the depth of the main channel by less than one inch (< 1.0 inch). This reduction in depth would not remove or significantly change the aquatic habitat values currently in the River. Depth in the River fluctuates daily as wastewater discharge flows decrease in the night and increase in the day. The less than 11 percent flow reduction would result in less than significant impacts to aquatic and riparian habitats.

TABLE IV-1
DESCRIPTIONS OF HABITATS AND EXISTING CONDITIONS WITHIN THE STUDY AREA

Area	Existing Conditions
Segment 3	**Riparian Habitat:** 15.7 acres of black willow thickets (BWT) occurs mostly along the western edge of the segment, with some small BWT areas on the eastern edge. BWT in Segment 3 is of low quality due to a high density of homeless camps, invasive plants, and trash. The BWT provides numerous perching and nesting opportunities for raptors and songbirds that forage and nest in riparian areas. BWT and the invasive understory provide nesting habitat opportunities for special-status birds such as yellow warbler, yellow-breasted chat, and least Bell's vireo. **Aquatic Habitat:** The BWT is surrounded by flowing water, largely on the eastern side of the River and slower flowing, shallow water and ponding water occurs sporadically on the western edge. The channelization of the River, homeless camps, and trash negatively impact the quality of the aquatic habitat. The flowing water in the segment provides habitat for fish, amphibians, waterfowl, shorebirds, and other aquatic and semi-aquatic species. Sandbars, shallow pools, and emergent vegetation at the edges of the BWT provided opportunities for waterfowl, shorebirds, and other species to forage and to nest, and for amphibians to breed. The variation in aquatic and semi-aquatic habitats in this area provides adequate, but not high quality habitat for diverse wildlife community, but lacks native fish.
Segment 4	**Riparian Habitat:** 14.9 acres of BWT that is similar in structure and composition to that found in Segment 3. However, invasive plants had been removed between Fletcher Drive and the southern endpoint, BWT in Segment 3 is of low quality due to a high density of homeless camps, invasive plants, and trash. The BWT provides numerous perching and nesting opportunities for raptors and songbirds that forage and nest in riparian areas. BWT and the invasive understory provide nesting habitat for special-status birds such as yellow warbler, yellow-breasted chat, and least Bell's vireo. **Aquatic Habitat:** The BWT is surrounded by flowing water. Water flow in this segment is similar to that found in Segment 3, with main flow occurring on the eastern side and a low, shallow flow on the western edge sporadically. The channelization of the River, homeless camps, and trash negatively impact the quality of the aquatic habitat. The flowing water in the segment provides habitat for fish, amphibians, waterfowl, shorebirds, and other aquatic and semi-aquatic species. Sandbars, shallow pools, and emergent vegetation at the edges of the BWT provided opportunities for waterfowl, shorebirds, and other species to forage and to nest, and for amphibians to breed. The variation in aquatic and semi-aquatic habitats in this area provides adequate, but not high quality habitat for diverse wildlife community, but lacks native fish.

Segment 5	**Riparian Habitat:** 38.1 acres of BWT that is similar in structure and composition to that found in Segments 3 and 4. However, the BWT in this segment is the widest in the Study Area. Invasive plants were recently removed in the northern half of the segment at the time of the field survey, and the understory was largely bare as a result. The southern half had a dense understory of invasive plants. BWT in Segment 5 is the highest quality in the Study Area due to the greater width and area of habitat that provides denser cover for riparian birds and larger land for terrestrial species. However, the BWT is still of low quality due to a high density of invasive plants, trash, and homeless camps. The BWT provides numerous perching and nesting opportunities for raptors and songbirds that forage and nest in riparian areas. BWT and the invasive understory provide nesting habitat for special-status birds such as yellow warbler, yellow-breasted chat, and least Bell's vireo. **Aquatic Habitat:** The BWT is surrounded by flowing water. Water flow in this segment varies from the east, west, and center of the BWT. The channelization of the River, homeless camps, and trash negatively impact the quality of the aquatic habitat. The flowing water in the segment provides habitat for fish, amphibians, waterfowl, shorebirds, and other aquatic and semi-aquatic species. Sandbars, shallow pools, and emergent vegetation at the edges of the BWT provided opportunities for waterfowl, shorebirds, and other species to forage and to nest, and for amphibians to breed. The variation in aquatic and semi-aquatic habitats in this area provides adequate, but not high quality habitat for diverse wildlife community, but lacks native fish.
Segment 6	**Aquatic Habitat:** The River channel is concrete in this segment and the water forms a thin layer surrounding a fast moving center channel. Low quality habitat for aquatic species occurs in Segment 6 due to the concrete bottom of the River and shallow stream that is not suitable for native fish species. However, this area is an important foraging area for shorebirds and waterfowl due to the availability of invertebrates in the water. No opportunity for nesting occurs for these birds in this segment.
Segment 7	**Sandbar Habitat:** 40.2 acres of rocky sandbar that largely supports ruderal, weedy vegetation occurs along the edges of this Segment, largely in the northern end. The change in tide and River flow makes the acres of land variable in this segment. The sandbar habitat supports an abundance and diversity of shorebirds and waterfowl that forage in the rocky substrate, and this area is an important bird area for that reason. However, the native vegetation has largely been eliminated in this segment, and native saltwater marshes and lagoons that once would have been in this area have been developed. The sandbar habitat is of low quality because it lacks the native vegetation typical of a brackish marsh, is covered in invasive plants, and the natural hydrology of the River has been altered by channelization. Nonetheless this segment is still instrumental for foraging shorebirds and waterfowl that have limited other native areas to use. **Aquatic Habitat:** Brackish water occurs between the sandbars. The channelization of the River and trash negatively impact the quality of the aquatic habitat. The flowing water in the segment provides habitat for brackish fish such as carp and anchovy, waterfowl, shorebirds, and other aquatic and semi-aquatic species. However, native fish species are largely absent from this segment.

During dry weather, wastewater discharges dominate flow in the River. Other contributions from urban runoff and groundwater upwelling also add to the River flow. The project proposes to reduce the River flow by 10 percent under worst-case conditions. As described in the Hydrology Report prepared for this study (Appendix E), the project would result in a worst-case flow rate reduction of 8.1 cfs during the driest month of August.

As described in Appendix E, the proposed project would reduce the total wetted area of channel from 81.0 to 79.5 acres (-1.5 acres, 1.9 percent of existing condition) during the driest times of the driest years. This represents an average 14-inch-wide strip along both edges of the channel downstream of the LAGWRP discharge. Approximately 26 percent of this reduction would occur on concrete banks and 74 percent on soft channel materials. The reduction in wetted soft channel would be 1.1 acres spread out along a 5-mile segment of the River south of the LAGWRP discharge location and north of the Arroyo Seco confluence. This decrease in wetted area would not strand or substantially reduce riparian habitat (black willow thicket [BWT]) within the channel since there would remain sufficient water supplies to support the tree root zones within the River bed. Currently, the water levels in the channel change substantially throughout the day and night as discharge volumes vary with water use in the watershed. Storm flows scour some of the less mature vegetation in the winter. The existing riparian habitat is adapted to this flow variability. There would be no measurable reduction of BWT from the reduced discharge from LAGWRP and no BWT will be removed during the project. As a result, the resident and migratory wildlife community that depends on the vegetation and water in the River for foraging, breeding and refuge will be unaffected by the proposed project. Even though the River has been channelized and greatly affected by urbanization, the riparian habitat in the River is dynamic, and the variability in flows that occur from rainfall and other sources of water in the River will be unaffected by the proposed project. The reduced discharge would not cause a population of special-status species to drop below self-sustaining levels. Therefore, impacts to special-status wildlife would be less than significant.

The River becomes a hard-bottomed channel approximately 5 miles south of LAGWRP discharge location all the way to the estuary in Long Beach (approximately 20 miles). To assess the effects of the project on flows of fresh water to the estuary, ESA calculated the percentage of flow reduction in the River at the most downstream gage (Wardlow Road). The Project reduction is approximately 4 percent of August 2008 flow (the worst-case scenario) This represents the flow reduction in the driest month of the driest year within the eleven years for which flow data at all relevant gages were available. Thus, in all other months and years, the project effects would be smaller than the values cited above. Flows in the concrete-lined channel do not support significant aquatic habitats.

In some areas of the channel, perennial flow supports algal masses that provide foraging for birds, gulls in particular. The incidence and extent of such algal masses are supported by perennial flow in the River and tend to increase within the lower reaches of the River, which is associated with the overall increase in flow volume in the downstream reaches and associated potential to support aquatic vegetation. The results of the flow analyses for Segment 7 of the River (as shown in Figures 16 through 20 in the *Hydraulic Modeling Report* [Appendix E]) show the depth curves for the five cross sections. The red dashed lines indicate the water depth at which flow would spill out of the low flow channel onto the wider channel floor. In all five cross sections, and under all flow scenarios analyzed, the flows were too large to be contained within the low flow channel, and consequently flows spilled over the floor of the River channel at all times (i.e. the project effects never caused the concrete floor to dry out). The change in water depth across the channel was around 0.25 inches between existing and project flows, and 0.35 inches between existing and cumulative flows. To verify these potential flow impacts, ESA identified the range of flows that would cause the low flow channel to overflow in all the cross sections of the model that had a low flow channel, not just the five cross sections analyzed in detail above. This ranged from 55 – 80 cfs: i.e. assuming that flows do not fall below 80 cfs there would be no change in wetting of the algal mats. As shown in Table 7 of the *Hydraulic Modeling Report*, flows would never fall below 80 cfs under the project or cumulative conditions scenarios, and thus all flows would be expected to continue to spill out of the low flow channel and wet the areas where algae currently grow.

As discussed above, the perennial flow would not diminish significantly as a result of the project and other projects within the River’s watershed since baseline flows would represent an even smaller proportion of the overall flows in the River channel further downstream. Below the confluence with the Arroyo Seco, numerous storm drains discharge urban runoff to the channel that augments flows in the low-flow channel. These flows would continue to support algal masses once LAGWRP contribution to flow are reduced, and the modeling results indicate that these areas would not dry up as a result of project-related or cumulative flow reductions. Furthermore, the algal mats are not identified as significant habitat areas, and do not support special status species, but rather provide incidental foraging opportunities for birds traveling along the river corridor. As such, to the extent that birds utilize the algal mats for foraging purposes, an incremental reduction in these foraging areas, even if it were to occur, would not substantially adversely affect any special status bird species or other migratory birds, since such birds would simply forage in other areas where food sources are available. Impacts to aquatic habitat below the Arroyo Seco confluence to the estuary would be less than significant.

Similarly, the estuary would not experience a significant reduction in fresh water. The reduction in flow may move the salinity line slightly further upstream in the concrete lined channel, but would not affect habitat values. Project impacts would be less than significant.

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less Than Significant Impact. As described in Appendix B, BWT and aquatic habitats are known to occur in Segments 3-7 of the River. As discussed above, there would be no measurable reduction of BWT from the reduced discharge from LAGWRP and no BWT will be removed during the project. Therefore, less than significant impacts to riparian habitat will occur from the project.

Aquatic Habitat

The River is a concrete-lined, soft-bottomed channel at LAGWRP discharge location that exhibits perennial surface flow from up-stream discharges. Appendix E provides a summary of river flow sources and volumes. Riparian habitat has emerged within the channel in the Study Area Segment 3-5, as described above in Table IV-1. varying between a fast moving in narrow areas, thin sheet-flow over concrete, slower turbulent water over boulders, slow-moving water along the edge of BWT, and areas of ponding water. The reduction in volume of discharged water by the proposed project would be 3,500 AF from the River each year, a 10 percent decrease of wastewater that is discharged into the River when considering the current combined discharge from the Tillman Water Reclamation Plant (Tillman WRP), LAGWRP, and other sources including surface runoff, Burbank WRP, and the Verdugo Wash. Additional sources of water into the River are from the Arroyo Seco Channel at the north end of Segment 6, the Rio Hondo Channel at the southern end of Segment 6, and the Tujunga Wash. Numerous storm channels convey urban runoff to the concrete-lined portion of the River channel from downtown Los Angeles to the ocean, incrementally increasing channel flows to the ocean.

The BWT in the Study Area helps to slow the velocity of water and creates pools that are used by certain non-native fish and aquatic species, as well as birds. The reduced discharge would reduce the depth of flow within the River channel, but would not significantly reduce or eliminate areas of slow-moving water or pools around the margins of areas with BWT. The current typical maximum depth of water in the study areas is 6.5 feet. The flow reduction could lower the depth of water by less than one inch (0.5 percent). In Segments 1-6 of the Study Area, the flow reduction would not reduce the overall water depth enough to eliminate the availability of foraging habitat for fish, amphibians, shorebirds or any other wildlife that may use the River for foraging or breeding. The reduction of freshwater into the Estuary from the River would not significantly alter the brackish water interface at the mouth of the River. The Estuary would continue to be fed by freshwater emptying into the unconfined Los Angeles harbor.

For these reasons, the reduction in flow from LAGWRP would not significantly reduce aquatic habitat values in the study area.

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?

Less Than Significant Impact. The River, including all of the aquatic habitat in the Study Area, is a Traditional Navigable Water (TNW) and under the jurisdiction of the Army Corps of Engineers. For the reasons described above in the Impact Analysis of Aquatic Habitat, the reduction in flow from LAGWRP would not significantly reduce aquatic habitat values in the Study Area. Therefore, the project would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act.

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?

Less Than Significant Impact. The River is an established fish and wildlife migratory corridor. However, no direct impacts to the River would occur from the proposed project, and, according to analysis presented above, indirect impacts to riparian and aquatic habitats will be less than significant. Therefore, the project would not interfere 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 within the River.

e. Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance?

Less Than Significant Impact With Mitigation Incorporated. The City of Glendale Indigenous Tree Program protects six native trees, including western sycamore and coast live oak. Approximately ten western sycamore trees occur within the proposed San Rafael Homes pipeline alignment, and two coast live oak trees occur at proposed pump station #1. Due to the proximity to the proposed project features, the roots of these trees may be encroached, or the tree may require removal or relocation depending on the placement of the proposed San Rafael Homes pipeline and pump station #1. Encroachment, removal, or relocation of western sycamore or coast live oak requires a permit from the City of Glendale. Implementation of MM BIO-2 below, which includes applying for an Indigenous Tree permit from the City of Glendale, will reduce the potential impacts to native trees protected by the City's Indigenous Tree Program to a less than significant level.

Mitigation Measure

MM BIO-2: An Indigenous Tree Program permit will be obtained from the City of Glendale prior to removal, encroachment, or substantial trimming (topping or pruning more than one-quarter of total live foliage) of native trees protected by the City of Glendale's Indigenous Tree Program, including western sycamore (*Platanus racemosa*) and coast live oak (*Quercus agrifolia*). For every tree removed by the project, two replacement trees at a minimum 15-gallon size shall be planted.

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 is not within an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved habitat conservation plan, and, therefore, no impacts will occur as a result of the proposed project.

V. CULTURAL RESOURCES

The following impact analysis pertaining to cultural resources is based on information contained in the project's *Cultural Resources Assessment* prepared by ESA in March 2018 and included as Appendix C.

Would the project:

a. Cause a substantial adverse change in significance of a historical resource as defined in State CEQA §15064.5?

Less Than Significant Impact.

Direct Impacts

Based on the results of the SCCIC records search, archival research, and survey, no historic architectural resources were identified within the Project site; however, one resource, the James Daniel Derby House (P-19-180696) was identified adjacent to the Project site along Chevy Chase Drive within the Chevy Chase Country Club component. The James Daniel Derby House is listed in the National Register of Historic Places and therefore qualifies as a historical resource pursuant to CEQA. The resource would have direct views of the Project site during construction; however, upon completion of the trench excavations for the pipeline, the streets would be repaved/restored to pre-project conditions. As such, the Project would not demolish or materially alter any of the character-defining features that contribute to the eligibility of the James Daniel Derby House as a historical resource. Therefore, the Project would not cause a substantial adverse change to the significance of the James Daniel Derby House. However, should Project design changes be considered, an additional impacts evaluation may be appropriate. As a result of these findings, the Project would not result in a significant direct or indirect impact to a historic architectural resource that qualifies as a historical resource. Therefore, the Project would have no impact on any known historical resources.

Indirect Impacts

Indirect impacts were analyzed to determine if the Project would result in a substantial material change to the integrity of adjacent historical resources pursuant to CEQA. (i.e. buildings identified as potentially eligible in a survey, determined eligible, or designated). The indirect impacts Study Area was defined as resources located adjacent to the Project site. The Project site consists of mostly residential or commercial buildings, spanning several decades from the 1920s through present. Along East Chevy Chase Drive within the Project site was the highest concentration of buildings over 45 years of age. These early residential buildings dating from the 1920s through the 1980s consisted of primarily single-family or multi-family and did not appear architecturally or historically significant. Only one historic-age built resource was identified. The James Daniel

Derby House (P-19-180696) built in 1926, is an American Modernistic residence decorated with ornamentation of Mayan inspiration, and designed by architect Lloyd Wright, son of master architect, Frank Lloyd Wright. The residence has been described as a "unique pre-cast concrete and knit block construction", with most of its exterior as covered with stucco. The residence is listed in the National Register under Criterion C (Dougherty, 1978). The James Daniel Derby House's character-defining features consist of its location, overall massing and scale, shape, materials (pre-cast concrete and knit blocks, stucco finish, fenestration, and hardscaping), roof, projections, and craft detailing.

The James Daniel Derby House is located at 2535 East Chevy Chase Drive in Glendale, where the proposed project will be constructing 8" pipelines within East Chevy Chase Drive. The pipeline construction would require excavation of a trench approximately two to five feet wide and between four and ten feet deep along the entire length of each pipeline alignment. Once the pipeline is constructed, streets would be repaved/restored to pre-project conditions. As such, the Project would not demolish or materially alter any of the character-defining features that contribute to the eligibility of the James Daniel Derby House as a historical resource. Therefore, the Project will avoid adverse change to James Daniel Derby House and indirect impacts to this resource would be less than significant.

b. Cause a substantial adverse change in significance of an archaeological resource pursuant to State CEQA §15064.5?

Less Than Significant Impact With Mitigation Incorporated. Based on the results of SCCIC records search, archival research, and survey, no archaeological resources have been identified within or immediately adjacent to the Project site. Based on the geoarchaeological analysis, the archaeological sensitivity for the majority of the Project site is considered low, however, the west end of the Chevy Chase Country Club component and portions of the Glendale Tee component are considered to have a high archaeological sensitivity, and therefore there is a high potential to encounter subsurface archaeological resources during construction in these particular areas of the Project site. Such resources could qualify as historical resources or unique archaeological resource under CEQA, and impacts to any such resources would constitute a significant impact on the environment. However, implementation of the following mitigation measures, as appropriate, would reduce such potential impacts to less than significant.

Mitigation Measures

The following mitigation measures are recommended to reduce impacts to historical resources and unique archaeological resources from the Project to a less than significant level consistent with the requirements of CEQA:

MM CUL-1: Prior to the issuance of a demolition permit, an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (U.S. Department of the Interior, 2008) (Qualified Archaeologist) shall be retained. The Qualified Archaeologist shall conduct cultural resources sensitivity training for construction personnel prior to construction. Construction personnel shall be trained on measures that will be implemented during construction and shall also be informed of the types of cultural resources that may be encountered, and the proper procedures to be followed in the event of an inadvertent discovery during construction. The City of Glendale shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance.

MM CUL-2: An archaeological monitor (working under the direct supervision of the Qualified Archaeologist) shall observe all ground-disturbing activities, including but not limited to: demolition, grubbing, trenching, grading, or any other construction excavation activity in the particular areas of the Project site that have been designated as archaeologically sensitive (see Figure 4, Archaeological Sensitivity Map). These areas include portions of the Glendale Tee component, north of Doran Street and the western portion of the Chevy Chase Country Club component. The frequency of monitoring shall be based on the rate of excavation and grading activities, the materials being excavated (younger sediments vs. older sediments), and the depth of excavation, and if found, the abundance and type of archaeological resources encountered. Full-time monitoring may be reduced to part-time inspections, or ceased entirely, if determined adequate by the Qualified Archaeologist.

MM CUL-3: In the event that historic (e.g., bottles, foundations, refuse dumps/privies, railroads, etc.) or prehistoric (e.g., hearths, burials, stone tools, shell and faunal bone remains, etc.) archaeological resources are unearthed, ground-disturbing activities shall be halted or diverted away from the vicinity of the find so that the find can be evaluated. An appropriate buffer area shall be established by the Qualified Archaeologist around the find where construction activities shall not be allowed to continue. Work shall be allowed to continue outside of the buffer area. All archaeological resources unearthed by Project construction activities shall be evaluated by the Qualified Archaeologist. If a resource is determined by the Qualified Archaeologist to constitute a "historical resource" pursuant to CEQA Guidelines Section 15064.5(a) or a "unique archaeological resource" pursuant to Public Resources Code Section 21083.2(g), the qualified Archaeologist shall coordinate with the City of Glendale to develop a formal treatment plan that would serve to reduce impacts to the resources. The treatment plan established for the resources shall be in accordance with CEQA Guidelines Section 15064.5(f) for historical resources and Public Resources Code Sections 21083.2(b) for unique archaeological resources. Preservation in place (i.e., avoidance) is the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. Any archaeological material collected shall be curated at a public, non-profit institution with a research interest in the materials, such as the Fowler Museum, if such an institution agrees to accept the material. If no institution accepts the archaeological material, they shall be donated to a local school or historical society in the area for educational purposes.

MM CUL-4: The Qualified Archaeologist shall prepare a final report and appropriate California Department of Parks and Recreation Site Forms at the conclusion of archaeological monitoring. The report shall include a description of resources unearthed, if any, treatment of the resources, results of the artifact processing, analysis, and research, and evaluation of the resources with respect to the California Register of Historical Resources and CEQA. The report and the Site Forms shall be submitted to the City of Glendale, the South Central Coastal Information Center, and representatives of other appropriate or concerned agencies to signify the satisfactory completion of the required mitigation measures.

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

Less Than Significant Impact With Mitigation Incorporated. The geological sediments of the Project site identified as younger alluvium are assigned low-to-high paleontological sensitivity, increasing with depth. While the exact depth at which the transition to high sensitivity sediments is unknown at the Project site, the nearest LACM locality was excavated from 14 feet below ground surface. As the current excavation plans for the Project do not exceed 10 feet in depth below ground surface, it is unlikely that high sensitivity older alluvial sediments will be encountered during construction of the Project. Other rocks in the Project site are igneous or metamorphic and have no paleontological sensitivity. As a result of these findings, paleontological construction monitoring is not recommended during construction of the Project. However, ESA is recommending mitigation measures that include cultural resources sensitivity training for construction personnel and procedures to be followed in the event of an inadvertent paleontological discovery during construction.

Mitigation Measures

Mitigation Measures PALEO-1 through PALEO-3 are recommended below to ensure that potentially significant impacts to buried paleontological resources are reduced to a less than significant level.

MM PALEO-1: Prior to the issuance of a demolition permit, a qualified paleontologist meeting the Society of Vertebrate Paleontology (SVP) Standards (SVP, 2010) (Qualified Paleontologist) shall be retained. The Qualified Paleontologist shall conduct paleontological resources sensitivity training for construction personnel prior to construction. In the event construction crews are phased, additional trainings shall be conducted for new construction personnel. The training session shall focus on the recognition of the types of paleontological resources that could be encountered within the Project site and the procedures to be followed in the event of an inadvertent discovery during construction. The City of Glendale shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance.

MM PALEO-2: If a potential fossil is encountered, construction activities in the vicinity of the discovery shall cease and be temporarily diverted or redirected to an area outside a 50-foot radius from the discovery. The Qualified Paleontologist shall be contacted immediately and allowed to evaluate the discovery, determine its significance, and to recommended appropriate treatment measures. An appropriate buffer area shall be established by the Qualified Paleontologist around the find where construction activities shall not be allowed to continue. Work shall be allowed to continue outside of the buffer area. At the Qualified Paleontologist's discretion, and to reduce any construction delay, the grading and excavation contractor shall assist in removing rock/sediment samples for initial processing and evaluation. If the Qualified Paleontologist deems the resource significant, and if preservation in place is not feasible, the Qualified Paleontologist shall implement a paleontological salvage program in accordance with the standards of the Society for Vertebrate Paleontology (2010) in order to remove the resource from the location. Any fossils encountered and recovered shall be prepared to the point of identification and catalogued before they are submitted to their final repository. Any fossils collected shall be curated at a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County, if such an institution agrees to accept the fossils. If no institution accepts the fossil collection, they shall be donated to a local school in the area for educational purposes. Accompanying notes, maps, and photographs shall also be filed at the repository and/or school. The Qualified Paleontologist shall also determine the need for paleontological construction monitoring during construction of the Project.

The Qualified Paleontologist shall prepare a report summarizing the results of the monitoring and salvaging efforts, the methodology used in these efforts, as well as a description of the fossils collected and their significance. The report shall be submitted by the Applicant to the City of Glendale, the Natural History Museum of Los Angeles County, and representatives of other appropriate or concerned agencies to signify the satisfactory completion of the Project and required mitigation measures.

d. Disturb any human remains, including those interred outside of dedicated cemeteries?

Less Than Significant Impact With Mitigation Incorporated. Although no known cemeteries or burial sites are known to existing within or in proximity to the Project site, the potential exists for undiscovered human remains to be encountered during Project-related grading and excavation activities. As such, the following mitigation measure would be implemented to ensure that impacts to human remains, if encountered during Project implementation, would be reduced to less than significant.

Mitigation Measure

The following mitigation measures are recommended to reduce impacts to human remains from the Project to a less than significant level consistent with the requirements of CEQA:

MM CUL-5: If human remains are encountered unexpectedly during implementation of the Project, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the NAHC. The NAHC shall then identify the person(s) thought to be the Most Likely Descendent (MLD). The MLD may, with the permission of the landowner, or his or her authorized representative, inspect the site of the discovery of the Native American remains and may recommend to the owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The MLD shall complete their inspection and make their recommendation within 48 hours of being granted access by the landowner to inspect the discovery. The recommendation may include the scientific removal and nondestructive analysis of human remains and items associated with Native American burials. Upon the discovery of the Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this mitigation measure, with the MLD regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment.

Whenever the NAHC is unable to identify a MLD, or the MLD identified fails to make a recommendation, or the landowner or his or her authorized representative rejects the recommendation of the descendants and the mediation provided for in Subdivision (k) of Section 5097.94, if invoked, fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall inter the human remains and items associated with Native American human remains with appropriate dignity on the property in a location not subject to further and future subsurface disturbance.

VI. GEOLOGY AND SOILS

Would the project:

a. Exposure of 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.

No Impact. Fault rupture is displacement that occurs along the surface of a fault during an earthquake. The project site is located in a seismically active area, as is the case throughout the Southern California region. Major faults and fault zones characterize the region. According to the City's General Plan Safety Element, Plate P-1, Summary of Hazards Map (I), the City of Glendale is situated in the Transverse Ranges Province and is exposed to risk from multiple earthquake fault zones including the Sierra Madre Fault Zone, Verdugo Fault Zone, Hollywood Fault Zone, the Elysian Park Fault Zone, and the Raymond Fault Zone.[7] According to the General Plan Safety Element and Plate P-1, the California Geological Survey (CGS) has identified the Rowley Fault (a section of the Sierra Madre Fault) and the Raymond Fault as sufficiently active and well defined to require zoning under the guidelines of the Alquist-Priolo Earthquake Fault Zoning Act. However, only the Rowley Fault extends into the City's boundaries.[8]

Since no physical development or changes in the current facilities or operations at LAGWRP are proposed by the project, implementation of the proposed discharge reductions would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault or active fault trace. With regard to the proposed recycled water distribution facilities, once constructed, the pipeline alignments and pump station locations could cross one or more known or unknown active earthquake faults. However, despite the potential presence of local earthquake faults underlying the proposed pipeline segments and pump station locations, the proposed project does not involve the placement of habitable structures or other improvements that could pose a risk to people or property resulting from surface rupture of a fault in the area. Furthermore, the proposed pipelines themselves would operate under

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7 *City of Glendale Safety Element of the General Plan, August 2003, Plate P-1, Summary of Hazards Map (I), http://www.glendaleca.gov/home/showdocument?id=4551.*

8 *Ibid.*

pressure and could be damaged or fail in the event of a fault rupture along the alignments. However, the pipelines would include isolation valves that could be closed if a pipe failure were to occur, which would preclude the potential for substantial adverse effects to people or structures in the area associated with pipe failure during a seismic event.

As such, based on the discussion above, construction and operation of the proposed project would not increase risks to people or structures from earthquake activity or fault rupture, since the proposed project would not involve new populated buildings or populations. Therefore, the proposed project would not expose people or structures to potential significant adverse effects from the rupture of a known earthquake fault. No impacts regarding project construction or operation would occur in this regard.

ii. Strong seismic ground shaking?

No Impact. Seismicity is the geographic and historical distribution of earthquake, including their frequency, intensity, and distribution. The level of ground shaking at a given location depends on many factors, including the site and type of earthquake, distance from the earthquake, and subsurface geologic conditions. They type of construction also affects how particular structures and improvements perform during ground shaking.

As discussed above, the project site is located in a seismically active region. There is potential for significant ground shaking at the project site during a strong seismic event on active regional faults in the southern California area. However, as no physical development or changes in current facilities or operations at LAGWRP are proposed, implementation of the proposed discharge reductions would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. With regard to the proposed recycled water distribution facilities, the project would be constructed to meet all applicable Building Codes and seismic safety standards, including the earthquake-resistant standards required by the City of Glendale. The fact that the proposed pipelines and pump stations would be constructed and operated underground minimizes the potential for above-ground impacts, and below-ground impacts would be limited to the area surrounding the pump station location or point of pipe failure to a shallow depth, if failure were to occur. In addition, as noted above, the proposed pipelines would be equipped with isolation valves that could be shut if a pipeline were damaged by a seismic event. Therefore, construction and operation of the proposed recycled water distribution facilities are not expected to increase the risk of exposure of people or structures to strong seismic ground shaking. No impacts would occur in this regard.

iii. Seismic-related ground failure, including liquefaction?

No Impact. Liquefaction is a process in which soil that is exposed to water (i.e., is below the local water table) becomes unstable when subjected to strong seismic ground shaking as occurs during a moderate to large earthquake. Loose to medium dense sand and silty sand are particularly susceptible to liquefaction. Predominantly fine-grained soils, such as silts and clay, are less susceptible to liquefaction. The project site and LAGWRP are located within a liquefaction hazard area.[9] However, as no physical development or changes in current facilities or operations at LAGWRP are proposed by the project, implementation of and the proposed discharge reductions would not expose people or structures to potential substantial adverse effects, including

[9] *Earthquake Zones of Required Investigation Burbank Quadrangle, California Geological Survey, Earthquake Fault Zones Official Map released January 1, 1979 and Seismic Hazard Zones Official Map released March 25, 1999,* *http://gmw.conservation.ca.gov/SHP/EZRIM/Maps/BURBANK_EZRIM.pdf; Earthquake Zones of Required Investigation Pasadena Quadrangle California Geological Survey, Seismic Hazard Zones Official Map released March 25, 1999,* *http://gmw.conservation.ca.gov/SHP/EZRIM/Maps/PASADENA_EZRIM.pdf.*

the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. The proposed recycled water distribution facilities to be constructed as part of the proposed project are not located within an area of liquefaction.[10] The proposed pipelines and pump stations would be constructed to meet all applicable Building Codes and seismic safety standards. Additionally, all trenches would be backfilled with engineered fill, which meets proper compaction and shear strength requirements, and therefore has little liquefiable potential. The proposed pipelines and pump stations would operate as underground structures. Due to the application of engineered fill during construction, damage to the pipeline structures and pump stations from an increase in lateral pressure is not expected. Additionally, as discussed above, the proposed pipelines and pump stations would be constructed and operated in compliance with standards required by the City of Glendale. As such, the proposed recycled water distribution facilities would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. No impact would occur in this regard.

iv. Landslides?

No Impact. The project site and LAGWRP are not located within an area susceptible to earthquake-included landslides.[11] Further, since no changes to current LAGWRP facilities or operations are proposed, the proposed discharge reductions would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides. While the Glendale Tee Facility is not, the proposed Chevy Chase Country Club and Chevy Oaks/Chevy Oaks/Camino San Rafael Homes Recycled Water facilities are located within areas susceptible to earthquake-included landslides.[12] However, project-related landslides or mudflows are not anticipated to occur in the general area of the proposed recycled water distribution facilities due to the fact that the pipelines and pump stations would be constructed entirely underground. No impact would occur in this regard.

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

Construction

Less Than Significant Impact. No construction activities regarding the wastewater reuse and discharge reductions from LAGWRP to the River would be necessary. The construction and operation of the proposed recycled water distribution facilities would occur within existing street rights-of-way and other developed or disturbed public property. During construction, short-term erosion impacts could occur as a result of grading/excavation from construction activities. These exposed soils could potentially cause erosion impacts during windy conditions and from construction vehicles traveling through the site. Precipitation during the storm events could cause the exposed soils to run off into public rights-of-way and/or storm drainage systems. The contractor would be required to develop and implement a plan to control erosion of soil from the site during construction. Because the on-street portions of the project site have been previously excavated, with implementation of an erosion control plan significant losses of topsoil are not anticipated. The development

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10 *Ibid.*

11 *Earthquake Zones of Required Investigation Burbank Quadrangle, California Geological Survey, Earthquake Fault Zones Official Map released January 1, 1979 and Seismic Hazard Zones Official Map released March 25, 1999, http://gmw.conservation.ca.gov/SHP/EZRIM/Maps/BURBANK_EZRIM.pdf; Earthquake Zones of Required Investigation Pasadena Quadrangle California Geological Survey, Seismic Hazard Zones Official Map released March 25, 1999, http://gmw.conservation.ca.gov/SHP/EZRIM/Maps/PASADENA_EZRIM.pdf.*

12 *Ibid.*

and implementation of the erosion control plan would keep impacts resulting from construction to less than significant levels, particularly in off-street portions of the alignment.

Operation

No Impact. As no physical development or changes in current facilities or operations at LAGWRP are proposed, and the proposed discharge reductions would not result in any site disturbance or grading activity that could expose soils susceptible to erosion. The increased application of recycled water to offset the use of potable water for non-potable purposes would not result in increased erosion since recycled water would be applied in the same location, manner and intensity as was done previously with potable water. Thus, project implementation of this component would not result in substantial soil erosion or the loss of topsoil. With regard to the proposed three new recycled water distribution pipelines and pump stations, these facilities would operate passively as a closed system once constructed, and would be located entirely underground; therefore, no additional impacts relative to soil erosion or loss of topsoil are expected. No operation impacts would occur in this regard.

c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potential result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

No Impact. Refer to Responses VII.a.i.-iv. As no additional development or changes in current operations at the at LAGWRP are proposed by the project, no impacts regarding the proposed discharge reductions would occur in this regard. With regard to the proposed recycled water distribution facilities, most of the alignment is located on a geologic unit or soil that is unstable when subject to strong seismic ground shaking. However, lateral spreading, subsidence, and collapse are not expected to occur along the proposed alignment, because the majority of the route was graded when the streets were originally developed. As discussed above, the proposed alignments are located within a liquefaction hazard area. However, the proposed pipelines and pump stations to be constructed underground would meet all applicable Building Codes and seismic safety standards. Additionally, all trenches would be backfilled with engineered fill, which meets proper compaction and shear strength requirements, and therefore has little liquefiable potential. Therefore, construction and operation of the proposed project are not expected to cause the local geologic units or soils to become unstable, or result in on- or off site landslide, lateral spreading, subsidence, liquefaction or collapse, and no mitigation is required.

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?

No Impact. Expansive soils are defined as fine-grained clayey soils that have the potential to shrink and swell with repeated cycles of wetting and drying. As no development or changes in current operations at LAGWRP are proposed by the project, the proposed discharge reductions would not have the potential to be affected by expansive soils or otherwise result in adverse effects related to such soils. As such, implementation of this project component would not cause any disturbance to the existing soils that are beneath the site or in any off-site areas. With regard to the proposed recycled water distribution facilities, the project alignments are located in urbanized areas that are currently developed, and construction activities and operation of project components would occur within existing street rights-of-way and other developed or disturbed public property. Furthermore, as discussed above, the proposed project would be constructed to meet all applicable Building Codes and seismic safety standards, and would incorporate engineered backfill during construction.

As such, no significant impacts involving the proposed recycled water distribution facilities are anticipated with regard to expansive soils. Therefore, no construction or operation impacts would occur in this regard.

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?

No Impact. The proposed project does not include the use or development of septic tanks or alternative wastewater disposal systems. Thus, no impacts would occur in this regard.

VII. GREENHOUSE GAS EMISSIONS

The following impact analysis pertaining greenhouse gas emissions is based, in part, from greenhouse gas modeling prepared by ESA in January 2018 and included as Appendix D.

Would the project:

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

Gases that trap heat in the atmosphere are called greenhouse gases (GHGs). The major concern with GHGs is that increases in their concentrations are causing global climate change. Global climate change is a change in the average weather on Earth that can be measured by wind patterns, storms, precipitation, and temperature. Although there is disagreement as to the rate of global climate change and the extent of the impacts attributable to human activities, most in the scientific community agree that there is a direct link between increased emissions of GHGs and long term global temperature increases.

The State defines GHGs as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs). Because different GHGs have different global warming potentials (GWPs) and CO_2 is the most common reference gas for climate change, GHG emissions are often quantified and reported as CO_2 equivalents (CO_2e). For example, CH_4 has a GWP of 25 (over a 100-year period); therefore, one metric ton (MT) of CH_4 is equivalent to 25 MT of CO_2 equivalents ($MTCO_2e$). The GWP ratios for the are available from the United Nations Intergovernmental Panel on Climate Change (IPCC) and are published in the *Fourth Assessment Report* (AR4). By applying the GWP ratios, project-related CO_2e emissions can be tabulated in metric tons (MT) per year. Large emission sources are reported in million metric tons (MMT) of CO_2e.[13]

Some of the potential effects in California of global warming may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more forest fires, and more drought years (CARB 2008). Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. The projected effects

[13] *A metric ton is 1,000 kilograms; it is equal to approximately 1.1 U.S. tons and approximately 2,204.6 pounds.*

of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects (IPCC 2001):[14]

- Higher maximum temperatures and more hot days over nearly all land areas;
- Higher minimum temperatures, fewer cold days and frost days over nearly all land areas;
- Reduced diurnal temperature range over most land areas;
- Increase of heat index over land areas; and
- More intense precipitation events.

Also, there are many secondary effects that are projected to result from global warming, including global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity. While the possible outcomes and the feedback mechanisms involved are not fully understood and much research remains to be done, the potential for substantial environmental, social, and economic consequences over the long term may be great.

California generated 440.4 MMTCO2e in calendar year 2015. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2015, accounting for approximately 37 percent of total GHG emissions in the state. This sector was followed by the industrial sector (21 percent) and the electric power sector (including both in-state and out-of-state sources) (19 percent).[15]

Impacts of GHGs are borne globally, as opposed to localized air quality effects of criteria air pollutants and toxic air contaminants. The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; however, it is clear that the quantity is enormous, and no single project would measurably contribute to a noticeable incremental change in the global average temperature, or to global, local, or micro climates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

The City of Glendale has not adopted a threshold of significance for GHG emissions that would be applicable to the proposed project. In December 2008, the SCAQMD adopted a 10,000 MTCO2e per year significance threshold for industrial facilities for projects in which the SCAQMD is the lead agency. Although SCAQMD has not formally adopted a significance threshold for GHG emissions generated by a project for which SCAQMD is not the lead agency, or a uniform methodology for analyzing impacts related to GHG emissions on global climate change, in the absence of any industry-wide accepted standards applicable to the proposed project, the SCAQMD's significance threshold of 10,000 MTCO2e per year for industrial projects is the most relevant air district-adopted GHG significance threshold and is used as a benchmark for the proposed project. It should be noted that the SCAQMD's significance threshold of 10,000 MT/year CO_2e for industrial projects is intended for long-term operational GHG emissions. The SCAQMD has developed guidance for the determination of the significance of GHG construction emissions that recommends that total emissions from construction be

[14] *IPCC, 2001. Climate Change 2001: Working Group I: The Scientific Basis, Summery for Policy Makers, 2001. Available at: http://www.ipcc.ch/ipccreports/tar/wg1/index.php?idp=0. Accessed March 2017.*

[15] *California Air Resources Board, California Greenhouse Gas 2000-2015 Inventory by Scoping Plan Category – Summary. Available at: http://www.arb.ca.gov/cc/inventory/data/data.htm. Accessed June 2017.*

amortized over an assumed project lifetime of 30 years and added to operational emissions and then compared to the threshold.[16]

The justification for the threshold is provided in SCAQMD's *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans* ("SCAQMD Interim GHG Threshold").[17] The SCAQMD Interim GHG Threshold identifies a screening threshold to determine whether additional analysis is required. As stated by the SCAQMD:

> *"…the…screening level for stationary sources is based on an emission capture rate of 90 percent for all new or modified projects…the policy objective of [SCAQMD's] recommended interim GHG significance threshold proposal is to achieve an emission capture rate of 90 percent of all new or modified stationary source projects. A GHG significance threshold based on a 90 percent emission capture rate may be more appropriate to address the long-term adverse impacts associated with global climate change because most projects will be required to implement GHG reduction measures. Further, a 90 percent emission capture rate sets the emission threshold low enough to capture a substantial fraction of future stationary source projects that will be constructed to accommodate future statewide population and economic growth, while setting the emission threshold high enough to exclude small projects that will in aggregate contribute a relatively small fraction of the cumulative statewide GHG emissions. This assertion is based on the fact that [SCAQMD] staff estimates that these GHG emissions would account for slightly less than one percent of future 2050 statewide GHG emissions target (85 [MMTCO$_2$e per year]). In addition, these small projects may be subject to future applicable GHG control regulations that would further reduce their overall future contribution to the statewide GHG inventory. Finally, these small sources are already subject to [Best Available Control Technology (BACT)] for criteria pollutants and are more likely to be single-permit facilities, so they are more likely to have few opportunities readily available to reduce GHG emissions from other parts of their facility."*

Thus, based on guidance from the SCAQMD, if an industrial project would emit GHGs less than 10,000 MTCO$_2$e per year, the proposed project would not be considered a substantial GHG emitter and GHG emission impact would be less than significant.

CEQA Guidelines 15064.4 (b)(1) states that a lead agency may use a model or methodology to quantify GHGs associated with a project. In September 2016, the SCAQMD in conjunction with the California Air Pollution Control Officers Association (CAPCOA) released the latest version of the CalEEMod (Version 2016.3.2). The purpose of this model is to estimate construction-source and operational-source emissions from direct and indirect sources. Accordingly, the latest version of CalEEMod has been used for this project to estimate the project's emission impacts.

Construction

Less Than Significant Impact. Project construction GHG emissions would occur from operation of heavy-duty equipment, vehicle trips from workers, vendors, and haul trucks. Construction emissions are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the mobile source emissions factors. The emissions estimated from the CalEEMod (Version 2016.3.2) software are based on outputs from the OFFROAD and EMFAC models, which are emissions estimation models developed by CARB and used to calculate emissions from construction activities, including on- and off-road vehicles and equipment. The output values used in this analysis were adjusted to be project-specific based on equipment types and the construction schedule. These values were

[16] *SCAQMD, 2008. Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold, October 2008. Available at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf?sfvrsn=2. Accessed March 2017.*

[17] *Ibid.*

then applied to the same construction phasing assumptions used in the criteria pollutant analysis (see Section III, *Air Quality*,) to generate GHG emissions values for each construction year. CalEEMod outputs construction-related GHG emissions of CO_2, CH_4, and CO_2e. These values are reported in units of metric tons for consistency with general state, federal, and global GHG emission inventories.

According to the SCAQMD, "GHG emission reduction measures for construction equipment are relatively limited."[18] Therefore, SCAQMD staff recommends that construction emissions be amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies. In order to consider project construction GHG emission in the larger operational context, GHG emissions from construction have been amortized over a 30-year lifetime of the proposed project (i.e., total construction GHG emissions were divided by 30 to determine an annual construction emissions estimate comparable to operational emissions) consistent with SCAQMD recommendations.

As shown in **Table VII-1,** the total construction GHG emissions over the duration of the proposed project would be 844. The total project GHG emissions amortized over 30 years would be the equivalent of 28 $MTCO_2e$ over the course of a 30-year period. Based on the minor amount of construction GHG emissions and that GHG impacts are cumulative in nature, construction impacts would be less than significant.

TABLE VII-1
CONSTRUCTION GHG EMISSIONS (METRIC TONS)

Construction Year	CO_2e (metric tons) [a]
2018	558
2019	286
Total	**844**
Annual (Amortized over 30 years)	**28**

Totals may not add up exactly due to rounding in the modeling calculations

Source: ESA, 2017

Operation

Less Than Significant Impact. Project operations would generate de minimis amounts of GHG emissions from maintenance vehicles traveling to pump stations. Maintenance trips would be on an as needed basis and would not occur daily. As a result, project operations would not be a major source of GHG emissions and impacts would be less than significant.

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

Less Than Significant Impact. Construction and operation of the proposed project would not conflict or obstruct implementation of policies and strategies to reduce GHG emissions. During construction, the

[18] *South Coast Air Quality Management District, Board Meeting, December 5, 2008, Agenda No. 31, Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans, Attachment E – E. Draft Guidance Document – Interim CEQA Greenhouse (GHG) Significance Threshold Document. Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf?sfvrsn=2. Accessed October 2017.*

proposed project would be subject SCAQMD's ATCM which restricts idling times to no more than 5 minutes which would reduce fuel consumption and GHG emissions. With expansion of a recycled water system, the proposed project would provide recycled water to a broader service population, thus reducing consumption of potable water and strain on local water supplies. Overall, the proposed project would not conflict with plans, policies, or regulations adopted for the purpose of reducing GHG emissions. Therefore, construction and operation impacts would be less than significant.

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?

Construction

Less Than Significant Impact. No construction activities regarding the wastewater reuse and discharge reductions from LAGWRP to the River would be necessary. Though construction of the proposed recycled water distribution facilities would involve the excavation and transport of paving materials (e.g., asphalt, concrete, road bed fill materials) that could possibly be contaminated by vehicle-related pollution (e.g., oil, gasoline, diesel, other automotive chemicals), the proposed project does not involve the routine transport, use, or disposal of hazardous materials. All such paving and road bed materials would be transported and disposed of in accordance with applicable codes and regulations. Such transport and disposal is not expected to create a significant hazard to workers or the surrounding community. Therefore, the proposed project would not create impacts related to the routine transport, use, or disposal of hazardous materials, and no mitigation is required. A less than significant impact would occur in this regard.

Operation

No Impact. No physical development or changes in current facilities or operations at LAGWRP are proposed by the project, and thus there would be no potential for the proposed discharge reductions to result in adverse operational impacts regarding the release of hazardous materials. Operation of the proposed recycled water distribution facilities would involve the storage and conveyance of recycled water, and would not require the use, storage, or disposal of hazardous substances. It should be noted that while recycled water is not suitable for human consumption, it is not considered a hazardous material, and thus the proposed increase in recycled water use would not create a significant hazard to the public or the environment. No additional sources of hazardous materials or increases in activities involving hazardous materials would occur under the proposed project. No impact would occur in this regard.

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?

Construction

Less Than Significant Impact. For construction in areas of the proposed recycled water distribution facilities, the construction contractor would be required to obtain an "Underground Service Alert Identification Number". To minimize potential damage to any existing utilities, the contractor would not be allowed to excavate until all utility owners are notified, and all substructures are clearly identified. As the project would convey recycled water, operation of the proposed facilities would not create a significant hazard to the public or environment involving the release of hazardous materials. A less than significant impact would occur in this regard.

Operation

No Impact. No changes to current LAGWRP facilities and operations are proposed by the project, and thus there would be no additional risks associated with hazardous materials releases relative to existing conditions related to the proposed discharge reductions. With regard to the proposed recycled water distribution facilities, no reasonably foreseeable upset or accident conditions that could involve the release of hazardous materials into the environment are anticipated during operation of the proposed facilities. It should be noted that while recycled water is not suitable for human consumption, it is not considered a hazardous material, and thus the proposed increase in recycled water use would not create a significant hazard to the public or the environment. No impact would occur in this regard.

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Construction

Less Than Significant Impact. As discussed above in the Air Quality section, operation of construction equipment would produce air contaminant emissions. None of these emissions are expected to be generated at levels that are considered hazardous. No construction activities regarding the wastewater reuse and discharge reductions from LAGWRP to the River would be necessary. Construction of the proposed recycled water distribution facilities would involve the excavation and transport of paving materials (e.g., asphalt, concrete, road bed fill materials) that could possibly be contaminated by vehicle-related pollution (e.g., oil, gasoline, diesel, other automotive chemicals). All such materials would be transported and disposed of in accordance with applicable codes and regulations. Such transport and disposal is not expected to involve acutely hazardous materials, substances or waste. The Glenoaks Elementary School is located at 2015 E. Glenoaks Drive, approximately one-quarter mile south of the Chevy Chase Country Club and Chevy Oaks/Camino San Rafael Homes Recycled Water pipeline alignments. The Columbus Elementary School is located at 425 W. Milford Street, approximately 0.20 miles west of the Glendale Tee pipeline alignment. Although these schools are located within one-quarter mile of the project, construction of the proposed recycle water distribution faculties is not anticipated to have an adverse effect on these schools, since construction activities would not involve hazardous emissions or materials, and no known hazardous materials sites are located in proximity to school sites in the area. Therefore, construction impacts to schools are anticipated to be less than significant.

Operation

Less Than Significant Impact. The project site includes the GWP and PWP service areas within the Cities of Glendale and Pasadena, as well as adjacent portions of the City of San Marino, City of Los Angeles, City of La Canada-Flintridge, and unincorporated Los Angeles County community of Altadena. LAGWRP is located in an urbanized area characterized by industrial, commercial, and retail uses, and although there are a number of sensitive receptors located within the area, including residential uses, no physical development or changes in current facilities or operations at LAGWRP are proposed by the project. As such, this component of the proposed project would not have the potential to result in hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste in any greater capacity than is necessary under existing conditions. With regard to the three proposed distribution facilities, although the Glenoaks Elementary School and

Columbus Elementary School are both located within one-quarter mile of the proposed alignments, operation of the proposed project is not anticipated to have an adverse effect on these schools, since operation would not involve hazardous emissions or materials, and no known hazardous materials sites are located in proximity to school sites in the area. This proposed project would convey recycled water under pressure along existing public rights-of-way and other previously disturbed areas. If there were any emergency condition related to the proposed recycled water distribution facilities, the result would involve the release of recycled water, which poses no immediate health threats; therefore, operation impacts to schools are anticipated to be less than significant.

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. The project site is not listed on a hazardous materials site according to the California Department of Toxic Substances Control website.[19] Further, no hazardous material sites are locate within the immediate vicinity of the project site. It is concluded that the potential for environmental impacts to the proposed project relative to these sites is low. If, during construction or operation of the proposed project, contamination is discovered with the potential to create a significant hazard to the public or the environment, the applicable regulatory agency would be contacted and the appropriate corrective actions undertaken to eliminate the hazard. No significant impacts are anticipated and no mitigation is required.

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 Hollywood Burbank Airport is located approximately six miles northwest of the project site. As noted previously, no additional construction or any changes to LAGWRP facilities or operations are proposed by the project. Construction of the proposed recycled water distribution facilities would not affect airport activities due to the limited scale and temporary nature of construction activities. Once constructed, the facilities would operate passively and underground. As such, neither construction nor operation of the proposed project would result in a safety hazard for people residing or working in the project area. No impact would occur in this regard.

f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for the people residing or working in the area?

No Impact. No private airstrips are located within two miles of the project site. As such, the proposed project would not result in a safety hazard for the people residing or working in the area related to private airstrips. No impact would occur in this regard.

[19] *California Environmental Protection Agency, Department of Toxic Substances Control. Envirostor Database. http://www.envirostor.dtsc.ca.gov/public/. Accessed January 2018.*

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

Construction

Less Than Significant Impact. The proposed project would not impair or physically interfere with an adopted emergency response plan or a local, state, or federal agency's emergency evacuation plan, except for possible short-term periods during construction of the proposed recycled water distribution facilities, when roadway access may be limited in some areas. The on-street construction activities would conform to all City Fire and Police Department vehicular access standards to allow adequate emergency access. Thus, the proposed recycled water distribution facilities would not physically interfere with any existing emergency response or evacuation plans. As discussed above, no construction activities regarding the wastewater reuse and discharge reductions from LAGWRP to the River would be necessary. No adverse impacts to emergency response or emergency evacuation plans are anticipated and no mitigation is required.

Operation

No Impact. As no development or changes to the project site or the current LAGWRP facilities or operations are proposed by the project other than the reduction in wastewater discharges and increased application of recycled water, the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Further, the three new recycled water distribution pipelines and pump stations would operate passively and would be located entirely underground within public rights-of-way (e.g., roadways) and other public property. Thus, no impacts would occur in this regard.

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. According to the City's General Plan Safety Element, Plate P-2, Summary of Hazards Map (II), the components of the proposed project that are located within a City designated fire hazard zone include the Chevy Chase Country Club and Chevy Oaks/Camino San Rafael Homes Recycled Water facilities.[20] However, the proposed project would not involve the placement of people or populated structures within these areas, as the proposed recycled water distribution facilities would be buried below ground. As such, construction and operation of the proposed project would not expose any people or structures to a significant risk of loss, injury or death involving wildland fires. Therefore, no construction or operation impacts are expected and no mitigation is required.

[20] *City of Glendale Safety Element of the General Plan, August 2003, Plate P-1, Summary of Hazards Map (I), http://www.glendaleca.gov/home/showdocument?id=4551.*

IX. HYDROLOGY AND WATER QUALITY

The following impact analysis pertaining to hydrology and water quality is based, in part, on information contained in the project's *Hydraulic Modeling Report* prepared by ESA in March 2018 and included as Appendix E.

Would the project:

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

Construction

Less Than Significant Impact. No construction activities regarding the wastewater reuse and discharge reductions from LAGWRP to the River would be necessary. However, project implementation would require the construction of the proposed recycled water distribution facilities. The construction of the proposed recycled water distribution facilities would not generate any wastewater or significantly increase urban runoff into existing storm drains, as the improvements would be placed entirely underground in previously disturbed areas. Based on the topography and geology of the project site, and proposed depths of excavation for construction, it is not anticipated that substantial dewatering would be required. However, if localized incidental dewatering is ultimately required, it would generate minimal quantities of discharge water, which would be pumped into existing storm drains nearby. This discharge water is not expected to contain any contaminants that would cause its release to violate any water quality standards or waste discharge requirements. All dewatering discharges would be carried out in accordance with all applicable requirements of Order No. R4-2011-0197/NPDES No. CA0053953. Therefore, no significant impacts to water quality from construction of the proposed project are anticipated and no mitigation is required.

Operation

Less Than Significant Impact. The proposed project includes a reduction in wastewater discharges from the LAGWRP to the River to support increased application of recycled water in the GWP and PWP service areas, construction and operation of three new recycled water distribution pipelines and associated pump stations within the City of Glendale, and a pipeline connection to Pasadena's recycled water distribution system. The construction and operation of the Pasadena's recycled water system improvements, as well as the application of recycled water within the PWP service area, were previously evaluated in the certified Pasadena Non-Potable Water Project Environmental Impact Report (EIR). Although the end-use application of treated wastewater generated at LAGWRP would change over time, with increased deliveries to recycled water users to offset potable water use for these applications, the quality of discharged or recycled effluent would comply with the Order No. R4-2011-0197/NPDES No. CA0053953. The operation of the proposed recycled water distribution facilities would not generate any wastewater or significantly increase urban runoff into existing storm drains, as the improvements would be placed entirely underground in previously disturbed areas. Therefore, no significant impacts to water quality from operation of the proposed project are anticipated and no mitigation is required.

b. Substantially deplete groundwater supplies or interfere 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 land uses for which permits have been granted)?

Construction

Less Than Significant Impact. During construction, the only groundwater impacts that the proposed recycled water distribution facilities could cause would be from dewatering activities. Based on the limited excavation depths proposed under the project, the likelihood of encountering groundwater during construction is considered low. However, in the event that groundwater is encountered during construction, dewatering is not expected to occur in quantities that would substantially deplete groundwater supplies or interfere substantially with groundwater recharge. The proposed project would serve to increase the application of recycled water in the GWP and PWP service areas, and would not contribute to the depletion of groundwater supplies, interfere substantially with groundwater recharge, or lower the groundwater table. No adverse impacts to groundwater supply or recharge are expected and no mitigation is required.

Operation

Less Than Significant Impact. The proposed project includes a reduction in wastewater discharges from the LAGWRP to the River to support increased application of recycled water in the GWP and PWP service areas, construction and operation of three new recycled water distribution pipelines and associated pump stations within the City of Glendale, and a pipeline connection to Pasadena's recycled water distribution system. While these reductions would be gradual, and would not represent a substantial portion of the overall flow volumes within the River downstream of the project site, it is possible that some portion of the discharges from LAGWRP percolate into local aquifers and may contribute to groundwater supplies. However, while there is some potential for treated wastewater discharges to contribute to groundwater storage volumes in the area, this contribution is a very small percentage of the overall groundwater recharge within the affected groundwater basin(s). As such, the proposed gradual reduction in discharges from LAGWRP, some portion of which may contribute to groundwater recharge in the area, would not constitute a substantial reduction in recharge volumes relative to overall recharge rates in the areas downstream with the River. Furthermore, it is possible that some portion of the recycled water applied within the project site could contribute to groundwater recharge as well, which could at least partially offset the reduction in recharge that may occur within the River. Further, the operation of the proposed recycled water distribution facilities would not deplete groundwater supplies or interfere with groundwater recharge. Thus, the proposed project would not have the potential to substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level, and impacts would be less than significant.

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?

Construction

Less Than Significant Impact. See Response to Item IV.d, below.

Operation

Less Than Significant Impact. The proposed project includes a reduction in wastewater discharges from the LAGWRP to the River to support increased application of recycled water in the GWP and PWP service areas, construction and operation of three new recycled water distribution pipelines and associated pump stations within the City of Glendale, and a pipeline connection to Pasadena's recycled water distribution system. The increased application of recycled water would not constitute a change in existing drainage patterns as the recycled water would be applied in the same location, manner and intensity as potable use currently being used for these purposes. While implementation of the proposed project would not physically alter the existing drainage pattern of the project site or area, it would incrementally reduce flow volumes entering the River. According to the results of the *Effects of Los Angeles – Glendale Water Reclamation Plant Discharge Reductions on the LA River – Hydraulic Modeling Report* prepared for the proposed project (included as Appendix E of this Initial Study), during winter and spring, the proposed project flow reduction from LAGWRP would be "drowned out" by flows in the River, with project flows constituting 0.1 to 4 percent of flow in the River between LAGWRP and the Arroyo Seco confluence, and a smaller percentage between Arroyo Seco and the estuary. The proposed project flows constitute a 10 percent reduction in flows in the River upstream of the Arroyo Seco confluence, and a 4 percent reduction in flows to the estuary during the August 2008 Condition. The August 2008 Condition represents the lowest flow in the River during the most recent 11-year period for which data is available and is used as the baseline. As such it is a highly conservative (worst-case) baseline (makes the project effect appear much greater than during more typical conditions). The proposed project flow reduction translates to an average reduction in flow depth between LAGWRP discharge point and the confluence with the Arroyo Seco of four-tenths of an inch (4/10") and a reduction in flow velocity of 2 percent. The shrinkage in wetted channel area is 1.5 acres over a 5.4-mile reach (1.9 percent of the existing wetted channel area [81 acres]) under the August 2008 Condition, equivalent to a seven inch (7") wide strip on either side of the channel. Twenty-six percent of the shrinkage in wetted area occurs on concrete lined bank or bed areas, and 74 percent on soft bottomed channel. This shrinkage would be seasonal not permanent, and these parts of the channel bed and banks would be re-wetted during the rainy season. It is not anticipated that the reduction in discharge would cause erosion or siltation in the River channel. Thus, while the proposed project would alter the volume of water discharged to the River from LAGWRP, it would not alter the drainage pattern of the site or surrounding area in a manner which would result in substantial erosion or siltation on- or off-site. As such, impacts in this regard 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?

Construction

Less Than Significant Impact. The proposed recycled water distribution facilities would be constructed within existing street rights-of-way and other developed or disturbed public property, and would not permanently alter the drainage pattern of the area as the facilities would be located entirely underground. Construction of the proposed recycled water distribution facilities would not alter the course of a stream or river, and an erosion control plan, as part of a project-specific Stormwater Pollution Prevention Plan (SWPPP) approved by the RWQCB, would be developed and implemented throughout construction activities for all project components, which would minimize the potential for erosion or siltation on- or off-site. The open-trench construction methods that are proposed would not substantially increase the rate or amount of surface runoff, or result in flooding on- or off-site. Therefore, a less than significant impact is anticipated and no mitigation is required.

Operation

Less Than Significant Impact. See Response to Item IX.c. above. While the proposed project would alter the volume of water draining to the River from LAGWRP, it would not increase the rate or amount of surface runoff or alter the drainage pattern of the site or surrounding area in a manner which would result in flooding on- or off-site. Further, operation of the proposed recycled water distribution facilities would occur below grade, and thus would not affect the course of a stream or river. Thus, given that flows would be reduced under the proposed project, impacts in this regard 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?

Construction

Less Than Significant Impact. Limited dewatering, if any, that may be required for construction would contribute minimal amounts of discharge water. This dewatering discharge water is not expected to be released in substantial quantities and is not expected to exceed the existing or planned capacity of the local stormwater drainage system. Furthermore, as mentioned above, the discharge water is not anticipated to contain significant quantities of contaminants, and would be of limited volume. As such, a less than significant impact would occur in this regard.

Operation

Less Than Significant Impact. See Response to Items IX.c. and IX.d. above. Given that recycled water would be applied at the same locations and in the same manner and intensity, the proposed project would not be expected to contribute additional runoff beyond that generated under existing conditions. In addition, based on the projected reduction in discharges to the River from LAGWRP under the proposed project, the capacity of existing or planned stormwater drainage systems (including the River) would not be exceeded. The proposed recycled water distribution facilities would operate as a closed system that would not create or contribute runoff water. Therefore, impacts to stormwater systems related to increased runoff volumes or polluted runoff would be less than significant.

f. Otherwise substantially degrade water quality?

Construction

Less Than Significant Impact. Potential short-term erosion effects could occur during site excavation and construction activities associated with the proposed recycled water distribution facilities that could temporarily affect surface water quality with runoff. Due to the linear nature of the area of the proposed pipelines and pump station locations and limited area of ground disturbance associated with its construction, this effect is expected to be minimal. Furthermore, an approval erosion control plan would be developed and implemented during construction activities that would minimize transport of soil materials off-site. On-site soils would be stabilized and drainage structures (temporary and permanent) would be constructed, as applicable, to control the flow of runoff and minimize the potential for erosion. If dewatering is necessary during construction, the water would be treated, as necessary, and discharged into the nearby storm drain system. All construction activities that would potentially affect water quality will be performed under all applicable rules, regulations and standards (e.g., Clean Water Act, California Water Code, and Basin Plan for the Los Angeles Region). A less than significant impact is anticipated relative to water quality and no mitigation is required.

Operation

Less Than Significant Impact. Refer to Response to Item IX.a. above. Although the end-use application of treated wastewater generated at LAGWRP would change over time, the quality of discharged or recycled effluent would comply with the Order No. R4-2011-0197/NPDES No. CA0053953. Operation of the proposed recycled water distribution facilities would be a closed system and therefore not substantially degrade or affect water quality. Thus, impacts in this regard would be less than significant.

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

h. Place within a 100-year flood area structures which would impede or redirect flood flows?

No Impact (g-h). According to the City's General Plan Safety Element, FEMA informed the City that no Special Flood Hazard Areas are present within the City limits. The City of Glendale is placed in Zone D, which has no mandatory flood insurance purchase requirements. As such, there are no flood insurance rate maps for Glendale resulting in Glendale not being listed in FEMA's Community Rating System. Further, the proposed project does not propose any physical development or changes in current facilities or operations at the project site or LAGWRP beyond the discharge reductions and increased deliveries of recycled water to offset potable water use under the proposed Wastewater Change Petition. Further, the construction and operation of the proposed recycled water distribution facilities would not place housing within a 100-year flood hazard area and would not place structures within a 100-year flood area which would impede or redirect flood flows. Thus, no impacts would occur in these regards.

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. According to the City's General Plan Safety Element, there are seven dams located within the Glendale area that are large enough that the State requires that inundation maps for these facilities be available. The Diederich Reservoir and Brand Park Dam are located within the Fault Hazard Management Zone for the Verdugo Fault. The East Glorietta Dam is located within an area susceptible to liquefaction. The Tenth and Western dams are located near the Verdugo Fault. The Glenoaks Dam is located within an area where several non-active faults have been mapped. In addition to these dams, there are 13 steel water storage tanks located within the City of Glendale. Three of these tanks are located within the fault hazard management zone for the Sierra Madre Fault. Nonetheless, the proposed project would not involve the construction of any structures or placement of people or structures in an area subject to flooding as a result of the failure of a levee or dam. In the event one of the pipelines fails, safety valves throughout the water distribution system may be shut off in response to a loss of pressure and to isolate the break. The volume of recycled water released in such an event would be limited to the amount of water contained in the section of pipeline between the shut-off valves, which is not expected to yield enough water to pose a threat to life or property. Therefore, flooding impacts are expected to be less than significant and no mitigation is required.

j. Inundation by seiche, tsunami, or mudflow?

Less Than Significant Impact. A tsunami is a great sea wave produced by a significant undersea disturbance. Given the proximity to the Pacific Ocean, Glendale is not susceptible to inundation by a tsunami. A seiche is an oscillation of an enclosed or semi-enclosed basin, such as a reservoir, harbor, lake, or storage tank. As discussed above, there are 13 steel water storage tanks located within the City of Glendale. Mudflows result from the downslope movement of soil and/or rock under the influence of gravity. As no physical development or changes in current facilities or operations at LAGWRP are proposed by the project, and further, because the proposed recycled water distribution facilities would be located entirely underground and would operate passively once constructed, project implementation would have a less than significant impact with regard to inundation by seiche, tsunami, or mudflows.

X. LAND USE AND PLANNING

Would the project:

a. Physically divide an established community?

Construction

No Impact. No construction activities regarding the wastewater reuse and discharge reductions from LAGWRP to the River would be necessary. Construction impacts from the proposed recycled water distribution facilities would be short-term and would occur entirely underground within existing street rights-of-way and other developed or disturbed public property. As such, the proposed project would not physically divide an established community. No impact would occur in this regard.

Operation

No Impact. The project site includes the entire GWP and PWP service areas within the Cities of Glendale and Pasadena, as well as adjacent portions of the City of San Marino, City of Los Angeles, City of La Canada-Flintridge, and unincorporated Los Angeles County community of Altadena. The proposed project does not propose any physical development or changes in current facilities or operations at LAGWRP, but would be limited to the discharge reductions as summarized in the proposed Wastewater Change Petition WW0097. Further, the proposed recycled water distribution facilities, once constructed, would operate passively below-grade. As such, the proposed project would not have the potential to physically divide an established community. No impacts would occur in this regard.

b. Conflict with 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?

Construction

Less Than Significant Impact. During construction, it is expected that project-related activities could result in the removal or relocation of a limited number of trees, which would be replaced in-kind in accordance with the tree regulations of the City's Indigenous Tree Program. While the proposed recycled water distribution facilities, as mentioned above, could result in the removal or relocation of specific trees in order to allow for construction of the proposed pipelines and pump stations, these trees would be replaced with similar specimens in essentially the same location such that the alignment would be restored to pre-project conditions. Therefore, the proposed recycled water distribution facilities would not conflict with City policies related to preservation of trees along the proposed alignments. Similarly, given the Applicant's commitment to replace trees and restore the project alignment to pre-Project conditions, no conflicts with applicable policies or regulations are expected to occur. Therefore, a less than significant impact would occur in this regard.

Operation

No Impact. The project site includes a wide variety of land uses with corresponding General Plan land use and zoning designations. However, the proposed project does not propose changes to the existing land use or zoning designations. Further, the proposed project would not involve any physical development or changes in current facilities or operations at LAGWRP, but would be limited to the discharge reductions per the proposed Wastewater Change Petition WW0097, which would have no potential to conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project. With regard to the proposed recycled water distribution facilities, the proposed alignments and pump station locations are currently developed within existing street rights-of-way and other developed or disturbed public property within the City of Glendale. While the General Plan land use designations and zoning designations within the proposed alignments vary substantially, it is important to note that the proposed pipelines and pump stations, once constructed, would operate passively underground and would not have any effect on existing land use or zoning designations. Therefore, no impacts would occur in this regard.

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

No Impact. The project site is not located within the boundaries of any habitat conservation plan or natural community conservation plan area. Thus, no impacts would occur in this regard.

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 project site is currently developed with urban uses. No portion of the project site or surrounding area is considered a known mineral resource area and no mineral resource extraction occurs in the project vicinity. As such, the proposed project would not have the potential to 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 currently developed, with no portion of the project site or surrounding area considered a known mineral resource area and no mineral resource extraction occurs in the project vicinity.

As such, the proposed project would not result in the loss of availability of, or access to, a locally-important mineral resource recovery site. No impact would occur.

XII. NOISE

The following impact analysis pertaining to noise is based, in part, from noise modeling prepared by ESA in January 2018 and included as Appendix F.

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?

Noise is defined as unwanted sound (i.e., loud, unexpected, or annoying sound); however, not all unwanted sound rises to the level of a potentially significant noise impact. To differentiate unwanted sound from potentially significant noise impacts, the City of Glendale has established noise regulations that protect noise-sensitive land uses. The following analysis evaluates potential noise impacts at nearby noise-sensitive land uses resulting from construction and operation of the proposed project.

Noise Principles and Descriptors

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air). Acoustics is defined as the physics of sound, where the fundamental scientific model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source, intervening topography or barriers, and atmospheric factors affecting the propagation path to the receiver determines the sound level and characteristics of the noise perceived by the receiver.

Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) that is measured in decibels (dB), which is the standard unit of sound amplitude measurement. Pressure waves traveling through air exert a force registered by the human ear as sound. The dB scale is a logarithmic scale (i.e., not linear) that describes the physical intensity of the pressure vibrations that make up any sound, with 0 dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of pain. In a non-controlled environment, a change in sound level of 3 dB is considered "just perceptible," a change in sound level of 5 dB is considered "clearly noticeable," and a change in 10 dB is perceived as a doubling of sound volume.[21]

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that deemphasizes the frequencies below 1,000 hertz (Hz) and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to extremely low and extremely high frequencies. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). A-weighting

[21] *Bies & Hansen, 1988. Bies, D.A. and C.H. Hansen, Engineering Noise Control, (1988).*

follows an international standard methodology of frequency de-emphasis and is typically applied to community noise measurements.

An individual's noise exposure is a measure of noise over a period of time, whereas a noise level is a measure of noise at a given instant in time. Community noise varies continuously over a period of time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic. What makes community noise variable throughout a day, besides the slowly changing background noise, is the addition of short-duration, single-event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual. These successive additions of sound to the community noise environment change the community noise level to varying degrees at any given time, thus requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts.

The time-varying characteristic of environmental noise over specified periods of time is described using statistical noise descriptors in terms of a single numerical value, expressed as dBA. The most frequently used noise descriptors are summarized below:

L_{eq}: The equivalent sound level over a specified period of time, typically 1-hour, i.e., $L_{eq(1)}$, expressed as L_{eq}. The L_{eq} is also referred to as the "average" sound level.

L_{max}: The maximum, instantaneous noise level.

L_{dn}: The L_{dn} is the average noise level over a 24-hour period, including an addition of 10 dBA to the measured hourly noise levels between the hours of 10:00 p.m. to 7:00 a.m. to account nighttime noise sensitivity. L_{dn} is also termed the day-night average noise level or DNL.

CNEL: Community Noise Equivalent Level (CNEL), is the average noise level over a 24-hour period that includes an addition of 5 dBA to the measured hourly noise levels between the evening hours of 7:00 p.m. to 10:00 p.m., and an addition of 10 dBA to the measured hourly noise levels between the nighttime hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity during the evening and nighttime hours, respectively.

City of Glendale General Plan Noise Element

The Noise Element of the City's General Plan[22] outlines the noise environment, effects of noise on people, primary noise sources within the City of Glendale, and potential strategies for mitigating excessive noise sources. The Noise Element sets an exterior CNEL noise standard of 65 dBA for residential uses, which applies to the outdoor environment such as private yards and patios where there are expectations of privacy. The following Noise Element policies are applicable to the proposed project:

2.1 Improve enforcement of required noise control measures in building design.

2.2 Coordinate noise abatement efforts among city departments.

[22] *City of Glendale, Noise Element of the General Plan, City of Glendale Planning Department, Mestre Greve Associates, May 2007.*

3.1 Ensure that land uses comply with adopted standards.

3.2 Encourage acoustical mitigation design in new construction when necessary.

The City of Glendale utilizes the Land Use/Noise Compatibility Matrix, shown in **Table XII-1,** *Land Use/Noise Compatibility Matrix* in site planning to identify site constraints and opportunities.

City of Glendale Municipal Code

Section 8.36.040 of the City of Glendale Municipal Code (GMC) establishes presumed exterior noise levels for the purpose of establishing standards. For residential properties, these ambient noise levels are 60 dBA at any time of day. Other provisions of the GMC that apply to the proposed project include the following:

Section 8.36.060 *– It is unlawful for any person to operate any machinery, equipment, pump, fan, voice, air-conditioning apparatus or similar mechanical device in any manner or to allow or cause sounds, so as to create any noise or vibration which would cause the noise level as specified above to be exceeded unless a variance, exemption, or some other exception allows for a greater noise.*

Section 8.36.080 *– It is unlawful for any person within a residential zone, or within a radius of five hundred feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures or projects within the city between the hours of seven p.m. on one day and seven a.m. of the next day or from seven p.m. on Saturday to seven a.m. on Monday or from seven p.m. preceding a holiday, as designated in Chapter 3.08 of this code, to seven a.m. following such holiday unless beforehand a permit therefor has been duly obtained from the building official. No permit shall be required to perform emergency work as defined in this chapter.*

Section 8.36.140 *– If at any time the director of community development or the building official has reason to believe that a new development project, addition, modification or any other change thereto may not conform with the permitted noise level standards, the director of community development or the building official may require as a condition of approval an acoustic analysis as part of the building permit process or other approval procedures.*

Section 8.36.180 *– It is unlawful for service or maintenance vehicles of a nonemergency nature to be operated in residential areas during nighttime.*

Section 8.36.210 *– Operating or permitting the operation of any device that creates a vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property or at one hundred feet from the source if on a public space or public right-of-way shall be a violation.*

Section 8.36.290 *– The following activities shall be exempted from the provisions of this chapter:*

D. Public health and safety activities conducted by public utilities, transportation, flood control and utility company maintenance and construction operations any time on public right-of-way and these situations which may occur on private real property deemed necessary to serve the best interest of the public and to protect the public's health and well-being, including but not limited to, police, fire, street sweeping, debris and limb removal, removal of downed wires, restoring electrical service, repairing traffic signals, unplugging sewers, house moving, vacuuming catch basins, removal of damaged poles and vehicles, repair of water hydrants and main gas lines, oil lines and sewers.

Existing Noise Environment

The existing noise environment along the project alignments and vicinity is dominated by vehicle traffic noise from the roadways of the alignments and nearby roadways (e.g., State Route 2 – the Glendale Freeway).

Secondary noise sources include activities of the single-family residential neighborhoods (e.g., landscaping). Therefore, ambient noise levels would be representative of a medium density suburban area. The City's General Plan provides vehicle traffic noise levels at 50 feet from the roadway centerline. Receptors located closer than 50 feet from the roadway centerline would be exposed to greater noise levels. Therefore, utilizing the General Plan traffic noise level at 50 feet represents a conservative baseline noise level. According to the General Plan, 2005 traffic noise along Central Avenue and Chevy Chase Drive reaches 76 dBA CNEL and 78 dBA CNEL, respectively. Traffic noise contours are not available along Chevy Oaks Drive or Chevy Oaks/Camino San Rafael. Residential receptors along the Glendale Tee alignment are located greater than 50 feet from Glenoaks Boulevard and therefore the General Plan traffic noise contour to 50 feet would not apply to these residential uses. Therefore, the presumed ambient noise level of 60 dBA, pursuant to Section 8.36.040 of the GMC, has been assumed for receptors along Chevy Oaks Drive, Chevy Oaks/Camino San Rafael, and Glenoaks Boulevard.

Other sources of noise within the City of Glendale includes a commuter rail line that generally follows the alignment of Interstate 5 (I-5) and is located approximately 0.6 miles from the Glendale Tee alignment. According to the Glendale General Plan Noise Element, there are six heliports/helipads within the City of Glendale. Three of the six heliports are located along the Ventura Freeway (SR-134) at Brand Boulevard, in close proximity to the Glendale Tee alignment.

Noise Sensitive Receptors

The project site is located on three alignments: Glendale Tee, Chevy Chase Country Club, and Chevy Oaks/Camino San Rafael Homes Recycled Water along roadways in the City of Glendale. The Glendale Tee alignment is generally bounded by commercial and residential uses. The Chevy Chase Country Club and Chevy Oaks/Camino San Rafael Homes Recycled Water alignments are generally bound by residential uses, which are adjacent to all three alignments and three pump stations.

TABLE XII-1
LAND USE COMPATIBILITY FOR COMMUNITY NOISE SOURCES

Land Use Category	***Noise Exposure (L_{dn} or CNEL, dBA)*** 55 60 65 70 75 80
Residential – Single-Family, Duplex, Mobile Home	
Residential – Multiple Family	
Transient Lodging – Motel, Hotel	
School, Library, Church, Hospital, Nursing Home	
Auditorium, Concert Hall, Amphitheater	
Sports Arena, Outdoor Spectator Sports	
Playground, Neighborhood Park	
Golf Course, Riding Stable, Water Recreation, Cemetery	
Office Building, Business Commercial and Professional	
Industrial, Manufacturing, Utilities, Agriculture	

	NORMALLY ACCEPTABLE: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
	CONDITIONALLY ACCEPTABLE: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.
	NORMALLY UNACCEPTABLE: New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
	CLEARLY UNACCEPTABLE: New construction or development should generally not be undertaken. Construction costs to make the indoor environmental acceptable would be prohibitive and the outdoor environment would not be usable.

Source: State of California, General Plan Guidelines, Governor's Office of Planning and Research, 2003

Construction Noise

Less Than Significant Impact. Construction of the proposed project is anticipated to begin in early 2018 and take a total of approximately 21 months to complete, with each pipeline/pump station segment being constructed sequentially. The proposed project is anticipated to be fully operational at the end of 2019. Construction activities would only occur Monday through Friday during daytime hours, with no construction activities occurring at night or on weekends or holidays. The analysis includes consideration of construction noise effects on noise sensitive receivers in the vicinity of the project site due to the operation of construction equipment (on-site construction activities) and haul trucks (off-site construction activities).

On-Site Construction Activities

Construction of the new recycled water distribution facilities above would involve open-trench construction within existing street rights-of-way and other developed or disturbed public property. Pipeline construction would require excavation of a trench approximately two to five feet wide and between four and ten feet deep along the entire length of each pipeline alignment. The three pump stations would be constructed below-grade adjacent to street rights-of-way, and would require excavation of an area approximately 40 feet by 40 feet with depths of up to 10 feet below existing grade. Once constructed, streets would be repaved/restored to pre-project conditions, and all proposed facilities would operate passively below-grade.

Project-related grading would result in the need for between 2,800 and 4,200 cubic yards (cy) of soil export, and between 2,400 and 3,900 cy of soil import, some of which may be balanced on-site where feasible and appropriate. Construction equipment is anticipated to include the following for each phase of construction:

- Phase 1 (Mobilization): flatbed truck, lowboy truck/trailer;
- Phase 2 (Pavement Cutting): pavement saw, pick-up truck;
- Phase 3 (Excavation, Pipe laying, Backfilling): air compressor, backhoe, dump truck, excavator, forklift, generator, mechanic truck, pick-up truck, welding truck;
- Phase 4 (Paving): grinding machine, paving machine, steam roller;
- Phase 5 (Pump Stations): dump truck, excavator, pick-up truck, crane, cement truck; and
- Phase 6 (De-mobilization): flatbed truck, lowboy truck/trailer, street sweeper.

None of the proposed construction phases are anticipated to overlap, as each would be completed sequentially as funding is secured.

Noise from construction activities would be generated by the operation of vehicles and equipment involved during various phases of construction. The noise levels generated by construction equipment would vary depending on factors such as the type and number of equipment, the specific model (horsepower rating), the construction activities being performed, and the maintenance condition of the equipment. Individual pieces of construction equipment anticipated to be used during project construction could produce maximum noise levels of 74 dBA to 81 dBA at a reference distance of 50 feet from the noise source, as shown in **Table XII-2,** *Construction Equipment and Estimated Noise Levels*. These maximum noise levels would occur when equipment is operating under full power conditions. The estimated usage factor for the equipment is also shown in Table XII-2, which are based on the Federal Highway Administration (FHWA) Roadway Construction Noise Model User's Guide (FHWA 2006).[23]

Therefore, the residences adjacent to the project construction would be exposed to these noise levels. However, according to the GMC Section 8.36.080, construction activity within a radius of 500 feet from a residential zone shall not occur between the hours of 7:00 p.m. and 7:00 a.m. Monday through Saturday or on Sundays and holidays. Project construction activities in the area will be performed within the hours established in the code. In addition, the City of Glendale has not adopted any quantitative noise level thresholds for construction activity during the allowable hours. Therefore, project construction would not expose persons to or generation of noise levels in excess of standards established in the local general plan or

[23] *Bies & Hansen, 1988. Bies, D.A. and C.H. Hansen, Engineering Noise Control, (1988).*

noise ordinance, or applicable standards of other agencies. Therefore, on-site project construction would be less than significant.

TABLE XII-2
CONSTRUCTION EQUIPMENT AND ESTIMATED NOISE LEVELS

Type of Equipment	Estimated Usage Factor (%)	Reference Noise Level at 50 feet (dBA, L_{max})
Air Compressors	20%	78
Backhoe	40%	80
Cement Mixer Truck	40%	79
Compactor	20%	80
Concrete Saw	20%	90
Crane	40%	81
Dump/Haul Trucks	20%	76
Excavator	40%	81
Forklift	10%	75
Grader	40%	85
Paver	50%	77
Rubber Tired Dozers	40%	84
Rubber Tired Loaders	50%	79
Sweeper/Scrubbers	10%	82
Tractor / Loader / Backhoe	25%	84
Trencher	40%	84
Welder	40%	74

SOURCE: FHWA 2006; and ESA 2017.

Off-Site Construction Activities

During construction, there would be a maximum of 14 haul truck trips per day, which would not appreciably increase existing average daily traffic volumes on roadways, and therefore, would not contribute to an audible increase in noise levels above the existing traffic noise levels. Construction activities are temporary in nature and would only take place for 21 months after which the proposed project would cease to have any significant lasting noise impact on the surrounding areas. Therefore, off-site construction traffic noise impacts would be less than significant.

Operational Noise

Less Than Significant Impact. The proposed project would construct new recycled water pipelines and three new pump stations. Noise generated by the project operation would result primarily from the added operation of three pump stations, which would be enclosed in underground concrete vaults, and off-site traffic from periodic maintenance vehicles. Operation of the proposed pump stations below grade would provide screening so that noise from pump operations would not contribute to the noise environment. The City of Glendale has not adopted any quantitative noise level thresholds for stationary noise sources. Therefore, operation of the proposed pump stations would not expose 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.

Additionally, traffic from maintenance of the proposed facilities would occur periodically and include a few vehicle trips per month. Therefore, long-term operation of the proposed project would have a minimal effect on the noise environment in proximity to the project site, and not expose 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. Therefore, the impacts are less than significant.

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

The proposed project would be constructed using non-impact construction techniques at a sufficient distance from vibration source to receptors (structures and people). As such, project construction would not expose persons to or generate excessive groundborne vibration. Post-construction on-site activities would be limited to maintenance activities that would not generate excessive groundborne vibration.

Vibration Principles and Descriptors

Ground-borne vibration from development is primarily generated from the operation of construction equipment and from vehicle traffic. Ground-borne vibration propagates from the source through the ground to adjacent buildings by surface waves. Vibration energy dissipates as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. Vibration in buildings is typically perceived as rattling of windows, shaking of loose items, or the motion of building surfaces. The vibration of building surfaces also can be radiated as sound and heard as a low-frequency rumbling noise, known as ground-borne noise. Vibration levels for potential structural damage is described in terms of the peak particle velocity (PPV) measured in inches per second (in/sec).

Ground-borne vibration is generally limited to areas within a few hundred feet of certain types of industrial operations and construction/demolition activities such as pile driving. Road vehicles rarely create enough ground-borne vibration amplitude to be perceptible to humans unless the receiver is in immediate proximity to the source or the road surface is poorly maintained and has potholes or bumps. If traffic, typically heavy trucks, does induce perceptible building vibration, it is most likely an effect of low-frequency airborne noise or ground characteristics.

Building structural components also can be excited by high levels of low-frequency airborne noise (typically less than 100 Hz). The many structural components of a building, excited by low-frequency noise, can be coupled together to create complex vibrating systems. The low-frequency vibration of the structural components can cause smaller items such as ornaments, pictures, and shelves to rattle, which can cause annoyance to building occupants.

Human sensitivity to vibration varies by frequency and by receiver. Generally people are more sensitive to low-frequency vibration. Human annoyance also is related to the number and duration of events; the more events or the greater the duration, the more annoying it becomes.

Regulatory Framework

Caltrans has adopted guidelines/recommendations to limit ground-borne vibration based on the age and/or condition of the structures that are located in close proximity to construction activity. With respect to residential and commercial structures, Caltrans' technical publication, titled Transportation and Construction Vibration Guidance Manual, provides a vibration damage potential threshold criteria of 0.5 in/sec PPV for historic and older buildings, 1.0 inch-per-second PPV for newer residential structures, and 2.0 in/sec PPV for modern industrial/commercial buildings. In addition, the guidance also sets 0.24 in/sec PPV as the threshold for "distinctly perceptible" human response to transient vibration.[24]

Section 8.36.210 of the GMC prohibits the operation of any device that creates perceptible vibration at 100 feet from the source if the source is within a public space or right-of-way. All proposed construction activity would occur within the public right-of-way.

Construction Vibration

Less Than Significant Impact with Mitigation Incorporated. The construction activities that typically generate the most severe vibrations are blasting and impact pile driving, which would not be utilized for the proposed project. The proposed project would utilize one vibratory roller over the course of ten days during the paving phase of each segment. Based on the vibration data set forth by Caltrans, typical vibration velocities from the operation of roller would be approximately 0.210 in/sec PPV at 25 feet from the source of activity, 0.074 in/sec PPV at 50 feet distance, and 0.026 in/sec PPV at 100 feet distance. Construction vibration would not reach "distinctly perceptible" levels at 100 feet pursuant to the GMC.

Although construction vibration would not exceed the City of Glendale's criteria for perceptible vibration at 100 feet from the source if the source is within a public space or right-of-way, construction vibration would exceed Caltrans' criteria for human annoyance at 10 feet with the use of a vibratory roller. At 10 feet, a vibration velocity of 0.83 in/sec PPV would be experienced, resulting in "strongly perceptible" vibration from a transient vibration source. Therefore, construction vibration impacts related to human annoyance would be potentially significant and mitigation would be required. Implementation of MM NOISE-1 would reduce vibration velocities reaching sensitive receptors to 0.21 in/sec PPV, below the "distinctly perceptible" vibration level established by Caltrans. Therefore, short-term vibration impacts would be mitigated to less than significant.

The nearest residential structures to the right-of-way are located approximately 10 feet from Central Avenue. At 10 feet, a vibration velocity of 0.83 in/sec PPV would be experienced, which would not exceed Caltrans' threshold for structural damage of newer residential units. All other receptors are located greater than 10 feet from the right-of-way. Therefore, construction vibration would not result in structural damage to newer residential structures, and impacts would be less than significant.

Operational Vibration

Less Than Significant Impact. Once construction activities have been completed, there would be no substantial sources of vibration activities from the project site. The project's operations would include three pump stations which would produce limited levels of vibration, which would not exceeding thresholds for structures or human perception. Additionally, the pump stations would be located in underground concrete vaults, further reducing vibration levels at the source. Therefore, vibration impacts during Project operation would be less than significant.

Mitigation Measure

MM NOISE-1: During pipeline construction activities within 25 feet to noise-sensitive receptors (e.g., residences), the proposed project shall avoid the use of vibratory rollers. Other means

[24] *State of California, Department of Transportation (Caltrans), 2004. Transportation- and Construction-Induced Vibration Guidance Manual. June 2004. Available: http://www.dot.ca.gov/hq/env/noise/pub/vibrationmanFINAL.pdf. Accessed April 2017.*

of paving shall be employed to ensure that transient vibration velocities do not exceed 0.24 in/sec PPV at any sensitive receptor.

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

Less Than Significant Impact. The existing noise environment in the project area is dominated by traffic noise from nearby roadways. Long-term operation of the proposed project would not have a significant effect on the community noise environment in proximity to the project site. Noise sources that would have potential noise impacts include: off-site vehicle traffic and facility equipment. Motor vehicle travel on local roadways attributable to the proposed project, as discussed in Response XII.a, would have a less than significant impact on community noise levels. Noise levels associated with on-site operations (e.g., underground pumps) are also considered less than significant as discussed in Response XII.a. As such, noise impacts would be less than significant.

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. The proposed project would result in a temporary increase in ambient noise levels near the project site during the construction period. An increase of 10 dBA is considered a doubling of sound, and therefore, audible to the human ear.

To more accurately characterize project construction noise levels, the maximum instantaneous construction equipment noise levels (L_{max}) shown in Table XII-2 can be expressed as the estimated average (hourly L_{eq}) noise level associated with each construction phase, based on the quantity, type, and usage factors for each type of equipment used during each construction phase, and typically attributable to multiple pieces of equipment operating simultaneously. Over the course of a construction day, the highest average noise levels would be generated when multiple pieces of the loudest construction equipment are operated concurrently. The project's estimated construction noise levels were calculated for a scenario in which a reasonable number of construction equipment was assumed to be operating simultaneously, given the physical size of the site and logistical limitations, and with the noisiest equipment located at the construction area nearest to the property line of affected receptors to present a conservative impact analysis.

The proposed alignments would be located within the public right-of-way with sensitive receptors located adjacent to those rights-of-way. The Applicant provided construction scheduling and anticipated construction equipment. All phases of construction would occur consecutively with no overlap of phases. Construction would occur along one segment at a time, completing one alignment before beginning another. The Chevy Chase Country Club and Chevy Oaks/Camino San Rafael Homes Recycled Water alignments include the construction of three (total) pump stations. The Applicant has indicated the potential for concurrent pump station construction and pipe installation. In order to provide a worst-case assessment of construction noise, concurrent operation of pump station and pipe installation equipment has been estimated. **Table XII-3**, *Estimated Construction Noise Levels at Sensitive Receptors*, presents the estimated total noise level for the combined project construction equipment during the nosiest phase of construction.

TABLE XII-3
ESTIMATED CONSTRUCTION NOISE LEVELS AT SENSITIVE RECEPTORS

Location	Distance to Noise Receptor Property Line (ft.) [a]	Construction Phase	Estimated Average Construction Noise Levels (dBA L_{eq}/CNEL)	General Plan Traffic Noise Contour (dBA CNEL)[b]	Construction + Ambient (dBA CNEL) [c]	Ambient Increase (CNEL)
Glendale Tee Alignment						
along Central Ave	10	Mobilization/ Demobilization	91	76	91.1	15.1
along Glenoaks Blvd	115		70	60 [d]	70.4	10.4
Chevy Chase County Club Alignment						
Chevy Chase Dr	15	Demobilization	88	78	88.4	10.4
Chevy Oaks/Camino San Rafael Homes Recycled Water Alignment						
Chevy Oaks Dr	20	Mobilization/ Demobilization	85	60 [f]	85.0	25.0
Chevy Oaks/Camino San Rafael	25		83	60 [f]	83.0	23.0
Pump Stations [e]						
Pump Station 1	50	Mobilization/ Demobilization + Pump Station	78	60 [f]	78.1	18.1
Pump Station 2	25		84	60 [f]	84.0	24.0
Pump Station 3	50		78	78	81.0	3.0

Note: Construction would not occur during nighttime hours. Therefore, the hourly Leq estimates for daytime construction noise would not be subject to the nighttime penalty and would be equivalent to the average CNEL. (see Ldn calculator: https://www.noisemeters.com/apps/ldn-calculator.asp)

[a] The distance represents the nearest construction area on the project site to the property line of the offsite receptor.

[b] General Plan 2005 noise levels at 50 feet from the roadway centerline. Receptors located closer than 50 feet from the roadway centerline would be exposed to greater noise levels. Therefore, utilizing the General Plan traffic noise level at 50 feet represents a conservative baseline noise level.

[c] Noise levels added logarithmically.

[d] Distance of receptors from the Glenoaks Boulevard right-of-way is greater than 50 feet. Therefore, the presumed ambient noise level of 60 dBA L_{eq} pursuant to Section 8.36.040 of the GMC has been assumed.

[e] Estimated noise levels at Pump Stations assumes concurrent pipeline installation.

[f] Traffic noise contours not available along Chevy Oaks Drive or Chevy Oaks/Camino San Rafael. Therefore, the presumed ambient noise level of 60 dBA L_{eq} pursuant to Section 8.36.040 of the GMC has been assumed.

SOURCE: ESA 2017; City of Glendale General Plan Noise Element Technical Appendix – Existing Traffic Noise Contours

In order to determine existing without project ambient noise levels, the General Plan Noise Element traffic noise contours were utilized.[25] Where traffic noise contours were not available or where residential receptors are located greater than 50 feet from the roadway centerline, the presumed residential ambient noise level of 60 dBA L_{eq}, pursuant to Section 8.36.040 of the GMC, has been assumed. Estimated noise levels, shown in Table XII-3, assume that the project contractor(s) would equip the construction equipment, fixed or mobile, with properly operating and maintained noise mufflers, consistent with manufacturers' standards. According to FHWA, use of adequate mufflers systems can achieve reductions in noise levels of up to 10 dBA.[26] However, the estimated noise levels presented in Table XII-3 do not account for noise shielding provided by existing walls or barriers. The estimated noise levels represent a conservative worst-case noise scenario where the construction activities are analyzed with several of the equipment simultaneously in use along the perimeter of the construction area, whereas construction typically would involve equipment in use throughout the

[25] *City of Glendale. General Plan Noise Element – Technical Appendix. December 2005. http://www.glendaleca.gov/home/showdocument?id=830. Accessed January 2018*

[26] *Federal Highway Administration. Special Report – Measurement, Prediction, and Mitigation: Chapter 4 Mitigation. https://www.fhwa.dot.gov/Environment/noise/construction_noise/special_report/hcn04.cfm. Accessed August 2017*

project site maintaining safe equipment operating distances, and resulting in most equipment in use further away from noise-sensitive receptors.

As shown in Table XII-3, construction activities could potentially result in noise levels that are up to 25 dBA greater than existing conditions. This level of potential noise increase would only occur during more active phases of construction, such as during mobilization and demobilization activities. This estimated maximum noise increase would be considered audible to the human ear and would generally be described as more than a doubling of sound, given that a 10 dBA increase is qualitatively described as a doubling in sound level.

Although construction noise levels could reach levels greater than 10 dBA over ambient levels, increases would only occur for a temporary duration at a sensitive receptor location as construction of the pipelines moves from one location to the next along the designated pipeline route. As discussed in the Project Description, each work crew is anticipated to construct approximately 100 linear feet of pipeline per work day along the Chevy Chase Country Club and Chevy Oaks/Camino San Rafael Homes Recycled Water alignments and approximately 75 linear feet of pipeline per work day along the Glendale Tee alignment, and thus construction activities would only occur in any one particular location for a period of a few days, such that construction-related noise would be experienced by nearby sensitive receptor for only a relatively short duration. As construction of each segment completes, construction activity and its noise levels would move away from the sensitive receptors affected by construction of that particular segment. Substantial adverse noise effects on sensitive receptors in the project area are not expected due to the very limited duration and intensity of construction activities at any one location. Therefore, the short-term 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. The Project site is not located within an airport land use plan area or within two miles of a public airport or public use airport. Therefore, construction or operation of the proposed project would not expose people to excessive airport related noise levels. No impact would occur in this regard.

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

No Impact. According to the Glendale General Plan Noise Element, there are six heliports/helipads within Glendale, all of which are only used during emergencies (e.g., firefighting, emergency evacuations, etc.). The construction crews working on the proposed project could be exposed to helicopters flying overhead. However, construction activities are temporary and construction crews would not be permanently exposed to helicopter noise associated with work on the proposed project. Additionally, the ground-level noise environment construction crews are exposed to would be dominated by construction equipment within the project site. Therefore, the proposed would not expose people residing or working in the project area to excessive noise levels from nearby heliports/helipads. Impacts would be less than significant.

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 project site is currently developed with a wide range of urban land uses. The project does not propose any physical development or changes in current facilities or operations at the project site or LAGWRP are beyond the discharge reductions and incremental increases in recycled water deliveries to offset potable water use proposed in the Wastewater Change Petition. Furthermore, the treated effluent that was previously discharged would be utilized for non-potable uses within the City of Glendale, City of Pasadena, and other jurisdictions served by recycled water from LAGWRP, in order to offset potable use for these applications. The proposed project includes the construction and operation of three new pipelines and pump stations to serve future recycled water users in the City of Glendale. As such, project implementation would not induce substantial population growth in the area, either directly or indirectly, as it would not provide additional supplies that could foster substantial growth in the area but rather would result in increased potable water conservation and enhanced supply reliability within the GWP and PWP service area. No impact would occur in this regard.

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

No Impact. As discussed above, the project does not propose any physical development or changes in current facilities or operations at the project site or LAGWRP beyond the discharge reductions and incremental increases in recycled water deliveries to offset potable water use proposed in the Wastewater Change Petition. The proposed project includes the construction and operation of three new pipelines and pump stations to serve future recycled water users in the City of Glendale. The construction and operation of the proposed recycled water distribution facilities would occur within existing street rights-of-way and other developed or disturbed public property below-grade. No housing is to be removed as part of the proposed project. Therefore, construction and operation of the proposed project would not necessitate the construction of replacement housing elsewhere. No impacts would occur in this regard.

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

No Impact. The project does not propose any physical development or changes in current facilities or operations at the project site or LAGWRP beyond the discharge reductions and incremental increases in recycled water deliveries to offset potable water use proposed in the Wastewater Change Petition. The proposed project includes the construction and operation of three new pipelines and pump stations to serve future recycled water users in the City of Glendale. The construction and operation of the proposed recycled water distribution facilities would occur within existing street rights-of-way and other developed or disturbed public property below-grade. The proposed project would not involve any activities that would result in the displacement of substantial numbers of people. Therefore, the proposed project would have no potential to displace people necessitating the construction of replacement housing elsewhere. No impact would occur in this regard.

XIV. PUBLIC SERVICES

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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:

a. Fire protection.

Construction

Less Than Significant Impact. No construction activities regarding the wastewater reuse and discharge reductions from LAGWRP to the River would be necessary. The proposed project would involve the construction of three new recycled water distribution pipelines and pump stations within the City of Glendale. Construction activities associated with the proposed recycled water distribution facilities may temporarily increase the demand for fire protection. However, in compliance with the requirements of the California Occupational Safety and Health Administration (OSHA) requirements, all construction managers and personnel would be trained in fire prevention and emergency response. Further, fire suppression equipment specific to construction would be maintained along the proposed alignments. As applicable, construction activities would be required to comply with the 2013 CBC, the 2013 California Fire Code (CFD), and the City's Fire Code, as applicable.

Construction activities would involve open-trench construction within existing street rights-of-way and other developed or disturbed public property which may involve temporary closure of lane segments or portions of intersections along the project alignments. Construction worker parking, stockpiling, and equipment and material deliveries would occur at existing GWP facilities or other City property. Construction-related traffic could result in increased travel time due to flagging or stopping of traffic to accommodate soil hauling and delivery trucks entering and existing the project site during construction. As such, construction activities could increase response times for emergency vehicles to local business and/or residences within the project vicinity, due to travel time delays to through traffic. However, the impacts of such construction activity would be temporary and on an intermittent basis. Only one improvement would be constructed at any given time, and thus it is anticipated that only one construction crew would be active throughout project construction activities. Further, a site-specific traffic control plans would be required to be prepared and implemented for each pipeline project in order to minimize disruptions to through traffic flow, maintain emergency vehicle access along the project alignments and neighboring land uses, and schedule worker and construction equipment delivery to avoid peak traffic hours. As part of the plan, the times of day and locations of all temporary lane closures would be coordinated so that they do not occur during peak periods of traffic congestion, to the extent feasible. Such events would be coordinated with neighboring construction projects, as necessary. In addition, GWP will notify all affected property owners of the access restrictions and traffic detours that will occur during construction. GWP will also maintain contact with emergency service providers to route their vehicles around and through the work zones. The traffic control plans would be prepared for review and approval by the City of Glendale. The plans would follow the standards outlined in the Caltrans Traffic Manual as well as applicable City guidelines. These practices, as well as techniques typically employed by emergency vehicles to clear or circumvent traffic (i.e., lights and sirens), are expected to limit the potential for significant delays in emergency response times during project construction. Therefore, impacts regarding emergency response times and emergency access during construction would be less than significant with the incorporation of the project's traffic control plans.

Overall, with compliance with the City's Fire Department, implementation of site-specific traffic control plans for construction activities, and given the temporary nature of necessary construction activities, construction impacts on fire protection would be less than significant.

Operation

No Impact. As no development at or changes to LAGWRP facilities or operations are proposed under the project, it is anticipated that no increases in the demand for fire protection services or for physical or staff resources associated with fire protection would result from implementation of the proposed discharge reductions. In addition, the increased use of recycled water for irrigation and other non-potable uses would offset potable water supplies that could be used for potable applications, including firefighting. Further, operation of the proposed recycled water distribution facilities would occur passively underground. As such, no operational impacts would occur in this regard.

b. Police protection.

Construction

Less Than Significant Impact. No construction activities regarding the wastewater reuse and discharge reductions from LAGWRP to the River would be necessary. The proposed project would involve the construction of three new recycled water distribution pipelines and pump stations within the City of Glendale. As discussed above, temporary lane closures may be required. However, these closures would be temporary in nature and in the event of partial lane closures, both directions of travel on area roadways and access along the project alignments would be maintained. All temporary lane closures would be coordinated so that they do not occur during peak periods of traffic congestion, to the extent feasible. Such events would be coordinated with neighboring construction projects, as necessary. In addition, the GWP will notify all affected property owners of the access restrictions and traffic detours that will occur during construction. GWP will also maintain contact with emergency service providers to route their vehicles around and through the work zones. Emergency vehicle drivers have a variety of options for avoiding traffic, such as using their sirens to clear a path of travel or driving in the lanes of opposing traffic. Further, as discussed above, site-specific traffic control plans for the proposed project would be prepared in order to minimize disruptions to through traffic flow, maintain emergency vehicle access along the project alignments and neighboring land uses, and schedule worker and construction equipment delivery to avoid peak traffic hours. Given the visibility of the project alignments from adjacent roadways and surrounding properties, existing police presence in project areas, and maintained emergency access, the proposed project is not expected to increase demand on existing police services to a meaningful extent. Therefore, with the implementation of the project's traffic control plans, the proposed project would have a less than significant temporary impact on police protection during the construction phases.

Operation

No Impact. As no development or changes to the project site or the current LAGWRP facilities or operations are proposed under the project, it is anticipated that no increases in the demand for police protection services or for physical or staff resources associated with police protection would result from its implementation. Further, operation of the proposed recycled water distribution facilities would occur passively underground. No impact would occur in this regard.

c. Schools.

Construction

No Impact. No construction activities regarding the wastewater reuse and discharge reductions from LAGWRP to the River would be necessary. The proposed project would involve the construction of three new recycled water distribution pipelines and pump stations within the City of Glendale. The Glenoaks Elementary School is located at 2015 E. Glenoaks Drive, approximately one-quarter mile south of the Chevy Chase Country Club and Chevy Oaks/Camino San Rafael Homes Recycled Water pipeline alignments. The Columbus Elementary School is located at 425 W. Milford Street, approximately 0.20 miles west of the Glendale Tee pipeline alignment. As such, the proposed alignments would not traverse either school. No construction impact would occur in this regard.

Operation

No Impact. The proposed project would does not involve any physical development or other changes to current LAGWRP facilities or operations that could generate students or increase demands for schools or other related facilities. Further, operation of the proposed recycled water distribution facilities and would not generate students or increased the need for schools or other related facilities. As such, no operational impacts would occur in this regard.

d. Parks.

Construction

No Impact. No construction activities regarding the wastewater reuse and discharge reductions from LAGWRP to the River would be necessary. The proposed project would involve the construction of three new recycled water distribution pipelines and pump stations within the City of Glendale. However, the proposed alignments would not traverse existing park and recreational facilities. As such, no construction impacts would occur.

Operation

No Impact. The proposed project would not introduce any new population that would create additional demands on existing or planned park facilities. Furthermore, the proposed project would not displace or directly impact any parks or recreational facilities. Thus, no impacts to park facilities would occur. However, please see additional discussion regarding recreation along and within the River under Section XV, Recreation, below.

e. Other public facilities.

No Impact. No other public facilities are anticipated to have the potential to be subject to adverse physical impacts associated with project implementation. No impact would occur in this regard.

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?

Construction

No Impact. No construction activities regarding the wastewater reuse and discharge reductions from LAGWRP to the River would be necessary. As discussed above, construction of the proposed recycled water distribution facilities would not traverse existing park and recreational facilities. As such, no impact would occur in regards to recreational facilities and activities during project construction.

Operation

Less Than Significant Impact. As noted previously, the proposed project would not involve any physical development or other changes to the project site or the current LAGWRP facilities or operations that could result in an increased demand for the use of park or other recreational facilities in the area. However, while the proposed project would have no effect on the use of existing parks and recreational facilities in the area, it would result in the incremental reduction in water levels entering the River, a portion of which is used by the public for various recreational activities. Specifically, a 2.5-mile reach of the Study Area, the Elysian Valley River Recreation Area, is permitted for kayaking and canoeing. This reach extends from Fletcher Drive (near the 2 Freeway) downstream to Steelhead Park (near the Arroyo Seco confluence) and closely corresponds to the ARBOR Reach 6 (see Appendix E). Kayaking along this stretch of the River could potentially be incrementally impacted if river depths were to fall below values needed for typical watercraft to float unencumbered downstream. Kayaks and canoes typically have a total depth of around 14-16 inches, with about half that depth being below the waterline. As a rough guide, any flow deeper than one foot is likely to be suitable for the type of craft used on the River. As discussed above under Section IX, Hydrology and Water Quality, of this Initial Study, in ARBOR Reach 6, average flow depth in the center of the channel is 14.9 inches under the August 2008 Condition, and is predicted to fall to 14.4 inches under the with-project condition, a decline of 0.6 inches or negative 0.3 percent. The reduction in wetted channel area within Reach 6 is 0.8 acres (2.6 percent of the existing wetted area) of which 27 percent is concrete channel. As such, the proposed project is not likely to have a noticeable effect on recreation within Reach 6, or elsewhere. Therefore, impacts regarding recreational facilities would be less than significant.

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. Construction and operation of the proposed project would not include recreational facilities or require construction or expansion of recreational facilities, which might have an adverse physical effect on the environment. No impact would occur in this regard.

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?

Construction

Less Than Significant Impact. No construction activities regarding the wastewater reuse and discharge reductions from LAGWRP to the River would be necessary. For a temporary period during construction, there would be minor alterations to the current traffic patterns. Pipeline construction would require excavation of a trench approximately two to five feet wide and between four and ten feet deep along the entire length of each pipeline alignment. The three pump stations would be constructed below-grade adjacent to street rights-of-way, and would require excavation of an area approximately 40 feet by 40 feet with depths of up to 10 feet below existing grade. Once constructed, streets would be repaved/restored to pre-project conditions, and all proposed facilities would operate passively below-grade.

Prior to construction, GWP would submit traffic control plans for approval to the City of Glendale to ensure that traffic impacts, including impacts to public transportation routes, are kept to a minimum. GWP would comply with any requirements specified by Glendale regarding construction activities. In order to be consistent with requirements specified by Glendale, as well as ensure job site safety, GWP would implement the following construction practices, as necessary and appropriate:

- Construction areas would be separated by concrete barriers.
- During construction, temporary traffic control devices, signs, and flagmen would be utilized to minimize traffic congestion. At nighttime, all barricades would be provided with flashing/steady burn warnings, and all delineators would have white reflective bands. All barricading and traffic controls would conform to the latest editions of the Standard Specifications for Public Works Construction (Greenbook) and the Work Area Traffic Control Handbook (WATCH).
- Safe and adequate pedestrian and vehicular access would be provided to police and fire stations, schools, fire hydrants, hospitals (if any), commercial buildings, and residential uses. The access to these facilities would be continuous and unobstructed.
- The construction of the pipeline would be coordinated with the Glendale Beeline to temporarily relocate bus stops if needed.
- Temporary traffic lanes would have a minimum width of 10 feet to provide safe access to cars, buses, trucks, and trailers.
- Sections of the proposed pipeline alignments would be installed using the open-trench method, along existing street rights-of-way in most instances. The open trenches should be covered with plates to allow traffic flow during peak periods and times when construction work is not taking place, if open trench construction is blocking traffic lanes.

- Construction would generally be carried out between 7 a.m. and 7 p.m., Mondays to Fridays with no construction activities occurring at night or on weekends or holidays.
- Staging equipment would occur at existing GWP facilities or other City property. With staging areas off-street, the equipment would not cause additional disruption to traffic flow during the construction period.
- Excavations would be fenced to provide protection against anyone falling into the excavation.
- GWP would assign a full-time construction inspector to the project to monitor the construction activities and to ensure that all traffic requirements specified by the City of Glendale are implemented.

Given implementation of site-specific traffic control plans for construction activities, no significant adverse environmental impacts associated with traffic load or congestion are anticipated to result from construction of the Project.

Operation

No Impact. As no development or changes to the project site or the current LAGWRP facilities or operations are proposed by the project, the project would not generate any traffic or result in any adverse effects on the traffic system. Further, operation of the proposed recycled water distribution facilities would occur passively underground. As such, the proposed project would have no potential to conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system. No operation impact would occur in this regard.

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) is a state-mandated program enacted by the State legislature to address impacts that urban congestion has on local communities and the region as a whole. The Metropolitan Transportation Authority (Metro) is the local agency responsible for implementing the requirements of the CMP. New projects located in the City of Glendale must comply with the requirements set forth in the CMP. These requirements include the provision that all freeway segments where a project could add 150 or more trips in each direction during peak hours must be evaluated. The guidelines also require evaluation of all designated CMP roadway intersections where a project could add 50 or more trips during peak hours. Since the proposed project would not generate any vehicle trips or have any effect on regional traffic facilities, including CMP facilities, no impact would occur in this regard.

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 project site is not located in close proximity to any airport or private airstrip. Further, the proposed project does not involve air transportation or permanent increases in traffic levels or changes in air traffic patterns in the area. Thus, no impact would occur in this regard.

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

Construction

No Impact. No construction activities regarding the wastewater reuse and discharge reductions from LAGWRP to the River would be necessary. Construction of the proposed recycled water distribution facilities would temporarily alter existing street/traffic patterns along the alignments. These temporary changes to traffic patterns and levels of service during the construction phase would be temporary and limited to the immediate area in which construction activities are occurring. All changes to traffic patterns (i.e., lane or ramp closures) would be coordinated with the City of Glendale to minimize impacts to motorists, public transportation patrons, and pedestrians. No design features (e.g., sharp curves or dangerous intersections) or incompatible uses are proposed as part of this project. As such, no construction impacts are anticipated and no mitigation is required.

Operation

No Impact. As no development or changes to the project site or the current LAGWRP facilities or operations are proposed by the project, it would not have the potential to increase hazards due to a design feature. Further, operation of the proposed recycled water distribution facilities would occur passively underground. As such, no operation impacts are anticipated and no mitigation is required.

e. Result in inadequate emergency access?

Construction

Less Than Significant Impact. The proposed recycled water distribution facilities would not hinder emergency access in the area except for short-term periods during construction. As mentioned above, all construction activities would be carried out in accordance with the Glendale's emergency access requirements and consistent with the approved Construction Traffic Management Plan and access would be maintained during construction. No significant emergency access impacts are expected and no mitigation is required.

Operation

No Impact. The project would not result in any physical development or other changes to the project site or the current LAGWRP facilities or operations such that emergency access would be reduced or otherwise adversely affected. Further, operation of the proposed recycled water distribution facilities would occur passively underground. Thus, no impacts would occur in this regard.

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?

Construction

Less Than Significant Impact. The proposed project would not conflict with adopted policies supporting alternative transportation. As discussed above, construction activities would be coordinated with the Glendale Beeline and the City of Glendale in order to minimize impacts to alternative transportation facilities (e.g., bus stops, bike lanes). Access to public transportation and bike lanes would be maintained throughout construction to the extent feasible. As a result, less than significant impacts to alternative transportation would result from the project and no mitigation is required.

Operation

No Impact. No development or changes in current to current LAGWRP facilities or operations are proposed by the project. Further, operation of the proposed recycled water distribution facilities would occur passively underground. Thus, project implementation would have no potential to affect alternative transportation or related facilities. Therefore, the proposed project would not conflict with adopted policies, plans, or programs public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. No impact would occur.

XVII. TRIBAL CULTURAL RESOURCES

Would the project:

a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- **i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or**
- **ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.**

No Impact. As noted above, the records search results indicate that no archaeological or historic architectural resources have been previously documented within or immediately adjacent to the Project site. Furthermore, the SLF search indicated that no tribal cultural resources are known to be located within the Project Site. Lastly, no responses were received from the Native American groups affiliated with the Project Site to the consultation notification letters sent out by the City of Glendale. Therefore, no impact would occur.

XVIII. UTILITIES AND SERVICE SYSTEMS

Would the project:

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

No Impact. The project site is located within the jurisdiction of the Sanitation Districts of Los Angeles County and the Los Angeles Regional Water Quality Control Board (LARWQCB). The proposed project includes a reduction in wastewater discharges from the LAGWRP to the River to support increased application of recycled water in the GWP and PWP service areas, construction and operation of three new recycled water distribution pipelines and associated pump stations within the City of Glendale, and a pipeline connection to Pasadena's recycled water distribution system. The construction and operation of the Pasadena's recycled water system improvements, as well as the application of recycled water within the PWP service area, were previously evaluated in the certified Pasadena Non-Potable Water Project Environmental Impact Report (EIR). While these discharges would be incrementally reduced over time, and recycled water deliveries incrementally increased, the treatment process and discharge requirements for effluent for LAGWRP would not change pursuant to the City of Glendale's approved Order No. R4-2011-0197/NPDES No. CA0053953, governing Glendale's recycling of treated wastewater. Although the end-use application of treated wastewater generated at LAGWRP would change over time, the quality of discharged or recycled effluent would comply with the Order No. R4-2011-0197/NPDES No. CA0053953. As such, the proposed project would not exceed wastewater treatment requirements, and no impact to wastewater treatment requirements of the applicable Regional Water Quality Control Board 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. Project implementation would not create water or wastewater system capacity problems. Instead, the City of Glendale would continue to discharge treated wastewater from LAGWRP at the same location within the River, but in reduced quantities. As a result of increased demand for recycled water within the ULARA, the City of Glendale is proposing to gradually increase its use of recycled water, thereby reducing its discharge of treated wastewater into the River over the next several years. Further, it is not anticipated that the construction and operation of the proposed recycled water distribution facilities would generate wastewater. Therefore, the proposed project would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. As such, no impacts 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?

Construction

Less Than Significant Impact. Stormwater drainage facilities are provided along the proposed alignments and surrounding vicinity. Site drainage would be collected with new storm drains and stormwater would be conveyed to an existing Los Angeles County storm drain in Colorado Street, Central Avenue, Glenoaks Boulevard, Cam San Rafael, Chevy Chase Drive, and Chevy Oaks Drive. Construction of the proposed project is not expected to increase stormwater runoff in the project area, since the project would be placed beneath previously developed surfaces (e.g., street rights-of-way and other public and private property). Although limited dewatering may be required during construction, this activity would be temporary in nature and the amount of dewatering discharge would not exceed the capacity of the existing stormwater drainage facilities, nor require new or expanded facilities of this type. The construction of the proposed project is not anticipated to require, or indirectly result in, the construction of new stormwater drainage facilities or the expansion of existing facilities. Therefore, impacts to stormwater drainage facilities would be less than significant and no mitigation is required.

Operation

No Impact. Project implementation would not create drainage system capacity problems as no development or change in the project site or the current LAGWRP facilities or operations are proposed by the project. In fact, the proposed project would result in the overall reduction in discharge volumes to the River, which are the primary stormwater drainage facilities serving the project site. In addition, the increased application of recycled water within the project site would not translate to an increase in stormwater runoff volumes that could adversely affect stormwater drainage facilities in the area, since recycled water would be applied at the same locations and in the same manner and intensity as is currently done with potable water. Further, the proposed recycled water distribution facilities, once operational, would be a closed system, and therefore would not impact stormwater drainage facilities. Thus, the proposed project would not require or result in construction of new storm water drainage facilities or expansion of existing facilities. No impact would occur in this regard.

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

No Impact. No new or expanded water entitlements would be required with implementation of the project, as the project does not propose development or changes to current LAGWRP facilities or operations. With regard to the increased application of recycled water within the GWP service area and new application of recycled water within the PWP service area, the use of recycled water for non-potable applications would offset the use of potable water that is currently being utilized for these purposes, and thus the project would reduce potable water demands. Further, the proposed project includes the construction and operation of three new pipelines and pump stations to serve future recycled water users in the City of Glendale. Thus, the proposed project would result in an increase in GWP potable water supplies and no impacts would occur in this regard.

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 a result of increased demand for recycled water within the ULARA, the City of Glendale is proposing to gradually increase its use of recycled water, thereby reducing its discharge of treated wastewater into the channel over the next several years. The proposed project would not require additional wastewater treatment capacity or new or expanded facilities. Further, it is not anticipated that the construction and operation of the proposed recycled water distribution facilities would generate or require wastewater capacity. As such, project implementation would not impact the treatment capacity of the wastewater treatment facilities serving the project area. Thus, no impacts would occur in this regard.

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

Construction

Less Than Significant Impact. Most of the construction activities required for the proposed project involve open trench pipeline construction methods, which involves excavation of an open trench in a linear fashion along the proposed alignments. Excavation and construction debris would be recycled or transported to the nearest landfill site and disposed of appropriately or to another location accepting clean fill materials for reuse. The construction contractor will work with the recycling coordinators of the City of Glendale to ensure that source reduction techniques and recycling measures are incorporated into project construction. The amount of debris generated during project construction is not expected to significantly impact landfill capacities. No significant impacts to landfill capacity are anticipated and no mitigation is required.

Operation

No Impact. As no development or changes in the project site or the current LAGWRP facilities or operations are proposed by the project, project implementation would not generate additional demands for solid waste disposal. Further, operation of the proposed recycled water distribution facilities would not generate any solid waste. No impact would occur in this regard.

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

Construction

Less Than Significant Impact. As mentioned in Response XVIII.f, above, construction debris would be recycled or disposed of in accordance with local and regional standards. As such, no significant impacts related to compliance with solid waste statutes and regulations are expected and no mitigation is required.

Operation

No Impact. No physical development or changes in current operations at LAGWRP are proposed by the project and the proposed distribution facilities, once constructed, would operate passively and would not generate notable quantities of solid waste. As such, no impacts would occur in this regard.

XIX. MANDATORY FINDINGS OF SIGNIFICANCE

a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, 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?

Wastewater Reuse and Discharge Reductions

Less Than Significant Impact. Based on the discussion presented in Section IV, Biological Resources, and Section V, Cultural Resources, above, impacts to sensitive species and habitats, as well as those to historic or prehistoric resources, would be less than significant without the need for mitigation. As such, the proposed project would not have the potential to degrade the quality of the environment, substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, 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, and impacts in this regard would be less than significant.

Proposed Recycled Water Distribution Facilities

Less Than Significant Impact With Mitigation Incorporated. The analysis conducted in this Initial Study results in a determination that the proposed recycled water distribution facilities, either individually or cumulatively, would not have a significant effect on the local environment. Since the proposed recycled water distribution facilities would be placed entirely underground under existing street rights-of-way and other public and private areas (almost all portions of which have been previously disturbed), and mitigation measures have been incorporated to address short-term impacts to fish, significant wildlife, and/or plant populations, the proposed project would not have the potential to degrade the environment in this regard. As described above, the potential for impacts to cultural resources from construction of the proposed project, with implementation of the identified project-specific mitigation measures, was found to be low; as such, significant adverse impacts to cultural resources are not anticipated. It is hereby found that the proposed recycled water distribution facilities involve no potential for any impacts, either individually or cumulatively, on wildlife resources and cultural resources.

b. Does the project have impacts which are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Less Than Significant Impact. The proposed project includes a reduction in wastewater discharges from the LAGWRP to the River to support increased application of recycled water in the GWP and PWP service areas, construction and operation of three new recycled water distribution pipelines and associated pump stations within the City of Glendale, and a pipeline connection to Pasadena’s recycled water distribution system. The construction and operation of the Pasadena’s recycled water system improvements, as well as the application of recycled water within the PWP service area, were previously evaluated in the certified Pasadena Non-Potable Water Project Environmental Impact Report (EIR). While the effects of the project’s increased use of recycled water would be generally limited to the GWP service area and adjacent portions of the City of Los Angeles, the treated wastewater flow’s contribution to the River could be subject to further reductions from other similar projects in the area in the future, which could be considered a cumulative impact.

In preparation of the analysis in this section, ESA reviewed the SWRCB website to gather information regarding all known pending and completed wastewater change petitions that could contribute to cumulative effects in conjunction with the proposed project. Based on this review, two (2) pending wastewater change petitions filed by the City of Burbank were listed by the SWRCB that could potentially affect treated wastewater discharges with the Project Study Area of the River and the corresponding flow volumes. Other wastewater treatment operators in this region may propose to increase the use of recycled water or otherwise propose to reduce discharges to the River. However, unless and until a wastewater treatment operator files a wastewater change petition with the SWRCB for approval of reductions in wastewater, it is not possible to determine the specific cumulative effects of such reductions over time.

The Hydrology Report included in Appendix E provides an assessment of project effects as well as cumulative effects from other planned discharge reductions, specifically the proposed reduction of discharge from the Burbank Water Reclamation Plant (BWRP). It is speculative currently to estimate the amount of flow reduction in other future projects that are not yet well defined or proposed. In particular, the flow contribution to the River from LADWP's Tillman WRP provides a substantial flow volume. If this flow were eliminated, the River may experience significant impacts from flow reduction. However, as demonstrated in Appendix E, LAGWRP contribution to that impact would not be cumulatively considerable.

The Report concludes that during low flow conditions in August, the cumulative condition (proposed project plus the proposed Burbank diversion) would result in a reduction of 0.1 feet per second velocity (-6.8%) and a 0.6-inch reduction in average depth (-0.5%). The Hydrology Report concludes that under the cumulative condition, total wetted area would be reduced by 2.5 acres, 26 percent of which would occur on the concrete channel walls spread out over five miles of river channel. The Report concludes that both the "Project effects and cumulative project effects are very minor, and fall well within the range of data collection and hydraulic model uncertainty and error. The Project hydrologic effects would likely be almost undetectable in the field, and the cumulative effects barely detectable."

Potential Impacts to Biological Resources

Under the cumulative project effects scenario, the average changes in flow depth and velocity are very small, and thus will not have a significant impact on habitat. As discussed in the Hydrology Report, the reduction in wetted area is 2.5 acres, or 3.2 percent of the existing condition wetted area, which would be spread out over the Study Area on either side of the River channel. As noted above for Project-specific impacts, of this area, it is expected that 26 percent of the reduction in wetted area occurs in areas of concrete bank or bed protection, reducing the area of earthen channel affected to 2.5 acres or 3.2 percent of the existing condition wetted area. This cumulative reduction in wetted area would occur over the Study Area (or an approximately 23-inch-wide strip along either side of the River channel). The incremental effects would not be cumulatively considerable because the minor decrease in wetted area will not strand riparian habitat that has emerged in the Study Area and sufficient water supplies will continue to support the root zones beneath the River. This is because the root zones would only occur in the soft-bottom channel areas, and the less than one-half inch flow depth would not be expected to drop the water level along the River banks below the depth of root structures, particularly those of BWT and other riparian vegetation with deep root systems. In addition, the reduced discharge would not significantly reduce or eliminate areas of slow-moving water or pools that support aquatic species. Likewise, a reduction in the depth of water by less than one half inch will not impact fish migration or movement of native aquatic species in the River. In sum, the incremental effects of the proposed Project, when considered together with the related projects, would not result in a cumulatively considerable impact on biological resources, including impacts to algal mats, for the reasons discussed above. During all other hydraulic conditions (outside of the August 2008 baseline condition), the proposed Project and proposed reductions from BWRP would have no measurable impacts on species and ecological communities potentially sensitive to changes in channel hydrology.

Potential Impacts to Recreation

As summarized in Hydraulic Modeling Report, a 2.5-mile reach within Study Area Segment A, the Elysian Valley River Recreation Area, is permitted for kayaking and canoeing. Under the cumulative effects scenario average flow depth in the center of the channel is predicted to fall from 14.9 inches to 14.1 inches a decline of 0.9 inches or -0.5%. This level of reduction will not impact recreational boating activities. Thus, the cumulative effects on recreation will be less than significant, and are likely to be barely noticeable within Reach 6, or elsewhere.

Conclusion Regarding Cumulative Effects

While it is acknowledged that the project-related flow reductions within the River would contribute to an overall lowering of water levels in certain areas, the proposed project's contribution to this cumulative effect is not anticipated to be substantial since LAGWRP's discharges currently do not represent a significant percentage of overall flows in the River that support beneficial uses, and the proposed discharge reductions are also not substantial from year to year and would be implemented over time. Thus, while the proposed project could contribute to cumulative effects regarding flow reductions in the River, the project's contribution to such impacts would not be considerable.

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

Less Than Significant Impact. As noted previously, no physical development or changes to facilities or operations at LAGWRP are proposed by the project. The proposed project would result in increased deliveries of recycled water over a period of several years in order to offset potable water consumption for non-potable applications, as well as nominal reductions in water levels within the River, neither of which would be considered a substantial adverse effect on human beings. The proposed recycled water distribution facilities would have no adverse effects on human beings other than the beneficial effect of providing a more reliable water supply to serve future recycled water users in the City of Glendale. Thus, substantial adverse effects on human beings, either directly or indirectly, are not anticipated to occur as a result of project implementation.

Appendices

Appendix A
Air Quality Modeling Data

Project Construction Schedule[1]

Phase	CalEEMod Phase Type	Start Date	End Date	# of construction days	Max daily # of workers	Total one-way worker trips per day	Vendor Trips per Day	Total-one way Vendor Trips per day	Total Haul Trucks[2]	Max Daily Haul Trucks per Day	Total One-Way Haul Trips per Day
Glendale T (Phase 1)		**1/1/2018**	**8/12/2018**	**160**							
Mobilization	Site Preparation	1/1/2018	1/2/2018	2	20	40	5	10	5	5	10
Pavement Cutting	Demolition	1/3/2018	1/12/2018	8	20	40	5	10	74	9	19
Excavation, Pipe Laying, Backfilling	Building Construction	1/13/2018	7/25/2018	138	20	40	5	10	550	4	8
Paving	Paving	7/26/2018	8/8/2018	10	20	40	5	10	-	-	-
De-Mobilzation	Site Preparation	8/9/2018	8/12/2018	2	20	40	5	10	5	5	10
Chevy Chase (Phase 2)		**8/13/2018**	**3/26/2019**	162							
Mobilization	Site Preparation	8/13/2018	8/14/2018	2	10	20	5	10	5	5	10
Pavement Cutting	Demolition	8/15/2018	8/24/2018	8	10	20	5	10	81	10	20
Excavation, Pipe Laying, Backfilling	Building Construction	8/25/2018	1/27/2019	110	10	20	5	10	710	6	13
Paving	Paving	1/28/2019	2/8/2019	10	10	20	5	10	-	-	-
Pump Station	Building Construction	2/9/2019	3/22/2019	30	10	20	5	10	1	1	2
De-Mobilzation	Site Preparation	3/23/2019	3/26/2019	2	10	20	5	10	5	5	10
Chevy Oaks/Camino San Rafael (Phase 3)		**3/27/2019**	**9/24/2019**	130							
Mobilization	Site Preparation	3/27/2019	3/28/2019	2	10	20	5	10	5	5	10
Pavement Cutting	Demolition	3/29/2019	4/4/2019	5	10	20	5	10	40	8	16
Excavation, Pipe Laying, Backfilling	Building Construction	4/5/2019	6/21/2019	56	10	20	5	10	810	14	29
Paving	Paving	6/22/2019	6/28/2019	5	10	20	5	10	-	-	-
Pump Station	Building Construction	6/29/2019	9/20/2019	60	10	20	5	10	1	1	2
De-Mobilzation	Site Preparation	9/21/2019	9/24/2019	2	10	20	5	10	5	5	10
Hoover,Toll,Keppel			Already constructed								

1 Based on Client Construction Information

2 Mobilization/Demobilization equipment total of 5 heavy duty trucks (2 flatbeds and 3 trucks towing the lowboy trailer)

Construction Subphase and Equipment	CalEEMod Equipment Type	# of equipment	Hours/day		
Glendale T					
Mobilization					
Flatbed Truck	Included in Haul Trucks	2	-		
Lowboy (Trailer)	No Emissions/ trucks pulling trailer inclu	3	-		
Pavement Cutting					
Pavement Saw	Concrete/Industrial Saws	1	8	81	0.73
Pick-Up Truck	Included in Worker Trips	1	-		
Excavation, Pipe Laying, Back Filling					
Air compressor	Air Compressors	2	8	78	0.48
Backhoe	Tractors/Loaders/Backhoes	2	8	97	0.37
Dump truck	Included in Haul Trucks	2	-		
Excavator	Excavators	2	8	158	0.38
Forklift	Forklifts	1	8	89	0.2
Generator	Generator Sets	2	8	84	0.74
Mechanic truck	Inlcuded in Worker Trips	1	-		
Pick-up truck	Included in Worker Trips	2	-		
Welding truck	Welders	1	8	46	0.45
Paving					
Grinding machine	Crushing/Proc. Equipment	1	8	85	0.78
Paving machine	Paving Equipment	1	8	132	0.36
Steam roller	Rollers	1	8	80	0.38
De-mobilization					
Flatbed truck	Included in Haul Trucks	2	-		
Lowboy (Trailer)	No Emissions/ trucks pulling trailer inclu	3	-		
Street sweeper	Sweepers/Scrubbers	1	8	64	0.46

Construction Subphase and Equipment	CalEEMod Equipment Type	# of equipment	Hours/day		
Chevy Chase					
Mobilization					
Flatbed Truck	Included in Haul Trucks	2	-		
Lowboy (Trailer)	No Emissions/ trucks pulling trailer inclu	3	-		
Pavement Cutting					
Pavement Saw	Concrete/Industrial Saws	1	8	81	0.73
Pick-Up Truck	Included in Worker Trips	1	-		
Excavation, Pipe Laying, Back Filling					
Air compressor	Air Compressors	2	8	78	0.48
Backhoe	Tractors/Loaders/Backhoes	2	8	97	0.37
Dump truck	Included in Haul Trucks	2	-		
Excavator	Excavators	2	8	158	0.38
Forklift	Forklifts	1	8	89	0.2
Generator	Generator Sets	2	8	84	0.74
Mechanic truck	Inlcuded in Worker Trips	1	-		
Pick-up truck	Included in Worker Trips	2	-		
Welding truck	Welders	1	8	46	0.45
Paving					
Grinding machine	Crushing/Proc. Equipment	1	8	85	0.78
Paving machine	Paving Equipment	1	8	132	0.36
Steam roller	Rollers	1	8	80	0.38
Pump Stations					
Dump truck	Included in Haul Trucks	1	-		
Excavator	Excavators	1	8	158	0.38
Pick-up truck	Included in Worker Trips	1	-		
Crane (2 days)	Cranes	1	8	231	0.29
Cement truck (5 days)	Included in Vendor Trips	1	-		
De-mobilization					
Flatbed truck	Included in Haul Trucks	2	-		
Lowboy (Trailer)	No Emissions/ trucks pulling trailer inclu	3	-		
Street sweeper	Sweepers/Scrubbers	1	8	64	0.46

Construction Subphase and Equipment	CalEEMod Equipment Type	# of equipment	Hours/day		
Chevy Oaks/ Camino San Rafael					
Mobilization					
Flatbed Truck	Included in Haul Trucks	2	-		
Lowboy (Trailer)	No Emissions/ trucks pulling trailer inclu	3	-		
Pavement Cutting					
Pavement Saw	Concrete/Industrial Saws	1	8	81	0.73
Pick-Up Truck	Included in Worker Trips	1	-		
Excavation, Pipe Laying, Back Filling					
Air compressor	Air Compressors	2	8	78	0.48
Backhoe	Tractors/Loaders/Backhoes	2	8	97	0.37
Dump truck	Included in Haul Trucks	2	-		
Excavator	Excavators	2	8	158	0.38
Forklift	Forklifts	1	8	89	0.2
Generator	Generator Sets	2	8	84	0.74
Mechanic truck	Inlcuded in Worker Trips	1	-		
Pick-up truck	Included in Worker Trips	2	-		
Welding truck	Welders	1	8	46	0.45

Paving					
Grinding machine	Crushing/Proc. Equipment	1	8	85	0.78
Paving machine	Paving Equipment	1	8	132	0.36
Steam roller	Rollers	1	8	80	0.38
Pump Stations					
Dump truck	Included in Haul Trucks	1	-		
Excavator	Excavators	1	8	158	0.38
Pick-up truck	Included in Worker Trips	1	-		
Crane (2 days)	Cranes	1	8	231	0.29
Cement truck (5 days)	Included in Vendor Trips	1	-		
De-mobilization					
Flatbed truck	No Emissions/ trucks pulling trailer inclu	2	-		
Lowboy (Trailer)	No Emissions	3	-		
Street sweeper	Sweepers/Scrubbers	1	8		

Demolition Quantities

Phase	Acres[1]	sqft	Concrete/Pavement Thickness	Volume (ft3)	Volume (CY)	Concrete Weight (lb/CY)[2]	Tons of Debris	Haul Truck Capacity[3]	Total Haul Trucks	Max Daily Haul Trucks per Day	Total One-Way Haul Trips per Day
Glendale T	0.92	40128	0.5	20064	743	4050	1505	10	74	9	19
Chevy Chase	1.01	44000	0.5	22000	815	4050	1650	10	81	10	20
Chevy Oaks/Camino San Rafael	0.50	21764	0.5	10882	403	4050	816	10	40	8	16

1 Based on Client Construction Information
2 http://syracuselandbank.org/wp-content/uploads/2014/07/CD-weight-to-volume-calculation-Waste-Cap-from-other-sources.pdf
3 http://www.earthhaulers.com/news/how-much-dirt-can-a-dump-truck-carry/

Excavation Quantities

Phase	Import (CY)[1]	Export (CY)[1]	Total Material Movement (CY)	Haul Truck Capacity (CY)[2]	Total Haul Trucks	Max Daily Haul Trucks per Day	Total One-Way Haul Trips per Day
Glendale T	2,500	3,000	5,500	10	550	4	8
Chevy Chase	3,300	3,800	7,100	10	710	6	13
Chevy Oaks/Camino San Rafael	3,900	4,200	8,100	10	810	14	29

1 Based on Client Construction Information

2 http://www.earthhaulers.com/news/how-much-dirt-can-a-dump-truck-carry/

City of Glendale Wastewater Project
Air Quality Construction Analysis

Unmitigated Construction Scenario

Regional Summary	ROG	NOX	CO	SO2	PM10 Total	Total PM2.5
Source				**lb/day**		
Phase 1 Mobilization - 2018	<1	2	2	<1	1	<1
Phase 1 Pavement Cutting - 2018	1	8	7	<1	1	1
Phase 1 Excavation, Pipe Laying, Backfill - 2018	4	31	29	<1	2	2
Phase 1 Paving - 2018	1	11	11	<1	1	1
Phase 1 De-mobilization - 2018	1	5	4	<1	1	<1
Phase 2 Mobilization - 2018	<1	2	1	<1	<1	<1
Phase 2 Pavement Cutting - 2018	1	8	6	<1	1	1
Phase 2 Excavation, Pipe Laying, Backfill - 2018	4	32	28	<1	2	2
Phase 2 Excavation, Pipe Laying, Backfill - 2019	3	26	26	<1	2	2
Phase 2 Paving - 2019	1	10	10	<1	1	1
Phase 2 Pump Station - 2019	1	10	7	<1	1	<1
Phase 2 De-mobilization - 2019	<1	4	3	<1	1	<1
Phase 3 Mobilization - 2019	<1	2	1	<1	<1	<1
Phase 3 Pavement Cutting - 2019	1	7	5	<1	1	1
Phase 3 Excavation, Pipe Laying, Backfill - 2019	3	31	29	<1	2	2
Phase 3 Paving - 2019	1	10	10	<1	1	1
Phase 3 Pump Station - 2019	1	10	7	<1	1	<1
Phase 3 De-mobilization - 2019	<1	4	3	<1	1	<1
Daily Maximum Emissions	**4**	**32**	**29**	**<1**	**2**	**2**
SCAQMD Regional Threshold	75	100	550	150	150	55
Above/(Under)	(71)	(68)	(521)	(150)	(148)	(53)
Exceeds Threshold?	No	No	No	No	No	No

Air Quality Construction Analysis

Unmitigated Construction Scenario

Localized Emissions Summary	NOX	CO	PM10 Total1	Total PM2.5
Source			**lb/hr**	
Phase 1 Mobilization - 2018	3	3	1	<1
Phase 1 Pavement Cutting - 2018	4	4	1	1
Phase 1 Excavation, Pipe Laying, Backfill - 2018	29	27	2	2
Phase 1 Paving - 2018	10	9	1	1
Phase 1 De-mobilization - 2018	3	2	<1	<1
Phase 2 Mobilization - 2018	2	2	<1	<1
Phase 2 Pavement Cutting - 2018	5	4	1	1
Phase 2 Excavation, Pipe Laying, Backfill - 2018	29	27	2	2
Phase 2 Excavation, Pipe Laying, Backfill - 2019	26	27	2	2
Phase 2 Paving - 2019	9	9	1	1
Phase 2 Pump Station - 2019	9	6	<1	<1
Phase 2 De-mobilization - 2019	3	2	<1	<1
Phase 3 Mobilization - 2019	2	1	<1	<1
Phase 3 Pavement Cutting - 2019	4	4	1	1
Phase 3 Excavation, Pipe Laying, Backfill - 2019	26	27	2	2
Phase 3 Paving - 2019	9	9	1	1
Phase 3 Pump Station - 2019	9	6	<1	<1
Phase 3 De-mobilization - 2019	3	2	<1	<1
Daily Maximum Emissions	**29**	**27**	**2**	**2**
SCAQMDLocalized Threshold	69	535	4	3
Above/(Under)	(40)	(508)	(2)	(1)
Exceeds Threshold?	No	No	No	No

Glendale Wastewater Project (Pasadena)

South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	0.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	12			**Operational Year**	2019
Utility Company	Glendale Water & Power				
CO2 Intensity (lb/MWhr)	1115.33	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Installation of Pipeline

Construction Phase - Project Specific Information

Off-road Equipment - Project Specific Information

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tblConstructionPhase	NumDays	0.00	2.00
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tblConstructionPhase	NumDays	0.00	2.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
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2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	3.8305	31.6051	29.2864	0.0524	4.8793	1.8561	5.1694	0.7948	1.7914	1.9469	0.0000	5,130.3527	5,130.3527	0.8345	0.0000	5,151.0417
2019	3.3913	31.0638	28.5300	0.0580	3.9202	1.6016	4.1679	0.6449	1.5459	1.7474	0.0000	5,734.0804	5,734.0804	0.8571	0.0000	5,755.5069
Maximum	**3.8305**	**31.6051**	**29.2864**	**0.0580**	**4.8793**	**1.8561**	**5.1694**	**0.7948**	**1.7914**	**1.9469**	**0.0000**	**5,734.0804**	**5,734.0804**	**0.8571**	**0.0000**	**5,755.5069**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Phase 1 Mobilization	Site Preparation	1/1/2018	1/2/2018	5	2	11
2	Phase 1 Pavement Cutting	Demolition	1/3/2018	1/12/2018	5	8	12
3	Phase 1 Excavation, Pipe Laying, Backfill	Building Construction	1/13/2018	7/25/2018	5	138	13
4	Phase 1 Paving	Paving	7/26/2018	8/8/2018	5	10	14
5	Phase 1 De-mobilization	Site Preparation	8/9/2018	8/12/2018	5	2	15
6	Phase 2 Mobilization	Site Preparation	8/13/2018	8/14/2018	5	2	16
7	Phase 2 Pavement Cutting	Demolition	8/15/2018	8/24/2018	5	8	17
8	Phase 2 Excavation, Pipe Laying, Backfill	Building Construction	8/25/2018	1/27/2019	5	110	18
9	Phase 2 Paving	Paving	1/28/2019	2/8/2019	5	10	19
10	Phase 2 Pump Station	Building Construction	2/9/2019	3/22/2019	5	30	20
11	Phase 2 De-mobilization	Site Preparation	3/23/2019	3/26/2019	5	2	21
12	Phase 3 Mobilization	Site Preparation	3/27/2019	3/28/2019	5	2	22
13	Phase 3 Pavement Cutting	Demolition	3/29/2019	4/4/2019	5	5	23
14	Phase 3 Excavation, Pipe Laying, Backfill	Building Construction	4/5/2019	6/21/2019	5	56	24
15	Phase 3 Paving	Paving	6/22/2019	6/28/2019	5	5	25
16	Phase 3 Pump Station	Building Construction	6/29/2019	9/20/2019	5	60	26
17	Phase 3 De-mobilization	Site Preparation	9/21/2019	9/24/2019	5	2	27

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Phase 1 Mobilization					
Phase 1 Mobilization					
Phase 1 Pavement Cutting	Concrete/Industrial Saws	1	8.00	81	0.73
Phase 1 Excavation, Pipe Laying, Backfill	Air Compressors	2	8.00	78	0.48
Phase 1 Excavation, Pipe Laying, Backfill	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Phase 1 Excavation, Pipe Laying, Backfill	Excavators	2	8.00	158	0.38
Phase 1 Excavation, Pipe Laying, Backfill	Forklifts	1	8.00	89	0.20
Phase 1 Excavation, Pipe Laying, Backfill	Generator Sets	2	8.00	84	0.74
Phase 1 Excavation, Pipe Laying, Backfill	Welders	1	8.00	46	0.45
Phase 1 Paving	Crushing/Proc. Equipment	1	8.00	85	0.78
Phase 1 Paving	Paving Equipment	1	8.00	132	0.36
Phase 1 Paving	Rollers	1	8.00	80	0.38
Phase 1 De-mobilization	Sweepers/Scrubbers	1	8.00	64	0.46
Phase 2 Mobilization					
Phase 2 Mobilization					
Phase 2 Pavement Cutting	Concrete/Industrial Saws	1	8.00	81	0.73
Phase 2 Excavation, Pipe Laying, Backfill	Air Compressors	2	8.00	78	0.48
Phase 2 Excavation, Pipe Laying, Backfill	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Phase 2 Excavation, Pipe Laying, Backfill	Excavators	2	8.00	158	0.38
Phase 2 Excavation, Pipe Laying, Backfill	Forklifts	1	8.00	89	0.20
Phase 2 Excavation, Pipe Laying, Backfill	Generator Sets	2	8.00	84	0.74
Phase 2 Excavation, Pipe Laying, Backfill	Welders	1	8.00	46	0.45
Phase 2 Paving	Crushing/Proc. Equipment	1	8.00	85	0.78
Phase 2 Paving	Paving Equipment	1	8.00	132	0.36
Phase 2 Paving	Rollers	1	8.00	80	0.38
Phase 2 Pump Station	Excavators	1	8.00	158	0.38
Phase 2 Pump Station	Cranes	1	8.00	231	0.29
Phase 2 De-mobilization	Sweepers/Scrubbers	1	8.00	64	0.46

Phase 3 Mobilization					
Phase 3 Mobilization					
Phase 3 Pavement Cutting	Concrete/Industrial Saws	1	8.00	81	0.73
Phase 3 Excavation, Pipe Laying, Backfill	Air Compressors	2	8.00	78	0.48
Phase 3 Excavation, Pipe Laying, Backfill	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Phase 3 Excavation, Pipe Laying, Backfill	Excavators	2	8.00	158	0.38
Phase 3 Excavation, Pipe Laying, Backfill	Forklifts	1	8.00	89	0.20
Phase 3 Excavation, Pipe Laying, Backfill	Generator Sets	2	8.00	84	0.74
Phase 3 Excavation, Pipe Laying, Backfill	Welders	1	8.00	46	0.45
Phase 3 Paving	Crushing/Proc. Equipment	1	8.00	85	0.78
Phase 3 Paving	Paving Equipment	1	8.00	132	0.36
Phase 3 Paving	Rollers	1	8.00	80	0.38
Phase 3 Pump Station	Excavators	1	8.00	158	0.38
Phase 3 Pump Station	Cranes	1	8.00	231	0.29
Phase 3 De-mobilization	Sweepers/Scrubbers	1	8.00	64	0.46

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Phase 1 Mobilization	0	40.00	10.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 Pavement Cutting	1	40.00	10.00	74.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 Excavation, Pipe Laying, Backfill	10	40.00	10.00	550.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 Paving	3	40.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 De-mobilization	1	40.00	10.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Mobilization	0	20.00	10.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Pavement Cutting	1	20.00	10.00	81.48	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Excavation, Pipe Laying, Backfill	10	20.00	10.00	710.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Paving	3	20.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Pump Station	2	20.00	10.00	1.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 De-mobilization	1	20.00	10.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Phase 3 Mobilization	0	20.00	10.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 Pavement Cutting	1	20.00	10.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 Excavation, Pipe Laying, Backfill	10	20.00	10.00	810.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 Paving	3	20.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 Pump Station	2	20.00	10.00	1.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 De-mobilization	1	20.00	10.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Phase 1 Mobilization - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0227	0.7863	0.1523	1.9900e-003	0.0437	3.0400e-003	0.0467	0.0120	2.9100e-003	0.0149		215.3236	215.3236	0.0155		215.7099
Vendor	0.0430	1.2149	0.3084	2.6000e-003	0.0640	8.8800e-003	0.0729	0.0184	8.4900e-003	0.0269		277.0092	277.0092	0.0191		277.4875
Worker	0.2137	0.1541	2.0012	4.9000e-003	0.4471	3.5900e-003	0.4507	0.1186	3.3100e-003	0.1219		487.4880	487.4880	0.0167		487.9046
Total	**0.2795**	**2.1553**	**2.4619**	**9.4900e-003**	**0.5548**	**0.0155**	**0.5703**	**0.1490**	**0.0147**	**0.1637**		**979.8209**	**979.8209**	**0.0512**		**981.1020**

3.3 Phase 1 Pavement Cutting - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.0252	0.0000	4.0252	0.6094	0.0000	0.6094			0.0000			0.0000
Off-Road	0.5194	3.9150	3.7241	6.2600e-003		0.2670	0.2670		0.2670	0.2670		592.6646	592.6646	0.0459		593.8118
Total	**0.5194**	**3.9150**	**3.7241**	**6.2600e-003**	**4.0252**	**0.2670**	**4.2921**	**0.6094**	**0.2670**	**0.8764**		**592.6646**	**592.6646**	**0.0459**		**593.8118**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0841	2.9093	0.5636	7.3700e-003	0.1616	0.0113	0.1728	0.0443	0.0108	0.0550		796.6974	796.6974	0.0572		798.1265
Vendor	0.0430	1.2149	0.3084	2.6000e-003	0.0640	8.8800e-003	0.0729	0.0184	8.4900e-003	0.0269		277.0092	277.0092	0.0191		277.4875
Worker	0.2137	0.1541	2.0012	4.9000e-003	0.4471	3.5900e-003	0.4507	0.1186	3.3100e-003	0.1219		487.4880	487.4880	0.0167		487.9046
Total	**0.3408**	**4.2783**	**2.8732**	**0.0149**	**0.6727**	**0.0237**	**0.6964**	**0.1813**	**0.0226**	**0.2038**		**1,561.1947**	**1,561.1947**	**0.0930**		**1,563.5186**

3.4 Phase 1 Excavation, Pipe Laying, Backfill - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.5100e-003	0.0000	4.5100e-003	6.8000e-004	0.0000	6.8000e-004			0.0000			0.0000
Off-Road	3.5376	28.2831	26.7339	0.0417		1.8376	1.8376		1.7737	1.7737		4,022.5859	4,022.5859	0.7671		4,041.7643
Total	**3.5376**	**28.2831**	**26.7339**	**0.0417**	**4.5100e-003**	**1.8376**	**1.8421**	**6.8000e-004**	**1.7737**	**1.7744**		**4,022.5859**	**4,022.5859**	**0.7671**		**4,041.7643**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0362	1.2535	0.2428	3.1700e-003	0.0696	4.8500e-003	0.0745	0.0191	4.6400e-003	0.0237		343.2695	343.2695	0.0246		343.8853
Vendor	0.0430	1.2149	0.3084	2.6000e-003	0.0640	8.8800e-003	0.0729	0.0184	8.4900e-003	0.0269		277.0092	277.0092	0.0191		277.4875
Worker	0.2137	0.1541	2.0012	4.9000e-003	0.4471	3.5900e-003	0.4507	0.1186	3.3100e-003	0.1219		487.4880	487.4880	0.0167		487.9046
Total	**0.2930**	**2.6225**	**2.5524**	**0.0107**	**0.5807**	**0.0173**	**0.5980**	**0.1561**	**0.0164**	**0.1725**		**1,107.7668**	**1,107.7668**	**0.0604**		**1,109.2774**

3.5 Phase 1 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1739	9.6902	8.8718	0.0137		0.6338	0.6338		0.6097	0.6097		1,338.4416	1,338.4416	0.2706		1,345.2067
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1739**	**9.6902**	**8.8718**	**0.0137**		**0.6338**	**0.6338**		**0.6097**	**0.6097**		**1,338.4416**	**1,338.4416**	**0.2706**		**1,345.2067**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0430	1.2149	0.3084	2.6000e-003	0.0640	8.8800e-003	0.0729	0.0184	8.4900e-003	0.0269		277.0092	277.0092	0.0191		277.4875
Worker	0.2137	0.1541	2.0012	4.9000e-003	0.4471	3.5900e-003	0.4507	0.1186	3.3100e-003	0.1219		487.4880	487.4880	0.0167		487.9046
Total	**0.2567**	**1.3690**	**2.3096**	**7.5000e-003**	**0.5111**	**0.0125**	**0.5236**	**0.1370**	**0.0118**	**0.1488**		**764.4972**	**764.4972**	**0.0358**		**765.3921**

3.6 Phase 1 De-mobilization - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3113	2.6668	2.0155	2.5400e-003		0.2224	0.2224		0.2046	0.2046		255.7499	255.7499	0.0796		257.7404
Total	**0.3113**	**2.6668**	**2.0155**	**2.5400e-003**		**0.2224**	**0.2224**		**0.2046**	**0.2046**		**255.7499**	**255.7499**	**0.0796**		**257.7404**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0227	0.7863	0.1523	1.9900e-003	0.0437	3.0400e-003	0.0467	0.0120	2.9100e-003	0.0149		215.3236	215.3236	0.0155		215.7099
Vendor	0.0430	1.2149	0.3084	2.6000e-003	0.0640	8.8800e-003	0.0729	0.0184	8.4900e-003	0.0269		277.0092	277.0092	0.0191		277.4875
Worker	0.2137	0.1541	2.0012	4.9000e-003	0.4471	3.5900e-003	0.4507	0.1186	3.3100e-003	0.1219		487.4880	487.4880	0.0167		487.9046
Total	**0.2795**	**2.1553**	**2.4619**	**9.4900e-003**	**0.5548**	**0.0155**	**0.5703**	**0.1490**	**0.0147**	**0.1637**		**979.8209**	**979.8209**	**0.0512**		**981.1020**

3.7 Phase 2 Mobilization - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0227	0.7863	0.1523	1.9900e-003	0.0437	3.0400e-003	0.0467	0.0120	2.9100e-003	0.0149		215.3236	215.3236	0.0155		215.7099
Vendor	0.0430	1.2149	0.3084	2.6000e-003	0.0640	8.8800e-003	0.0729	0.0184	8.4900e-003	0.0269		277.0092	277.0092	0.0191		277.4875
Worker	0.1069	0.0770	1.0006	2.4500e-003	0.2236	1.7900e-003	0.2254	0.0593	1.6500e-003	0.0609		243.7440	243.7440	8.3300e-003		243.9523
Total	**0.1726**	**2.0783**	**1.4613**	**7.0400e-003**	**0.3312**	**0.0137**	**0.3449**	**0.0897**	**0.0131**	**0.1027**		**736.0768**	**736.0768**	**0.0429**		**737.1497**

3.8 Phase 2 Pavement Cutting - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.4135	0.0000	4.4135	0.6683	0.0000	0.6683			0.0000			0.0000
Off-Road	0.5194	3.9150	3.7241	6.2600e-003		0.2670	0.2670		0.2670	0.2670		592.6646	592.6646	0.0459		593.8118
Total	**0.5194**	**3.9150**	**3.7241**	**6.2600e-003**	**4.4135**	**0.2670**	**4.6805**	**0.6683**	**0.2670**	**0.9352**		**592.6646**	**592.6646**	**0.0459**		**593.8118**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0932	3.2238	0.6245	8.1600e-003	0.1782	0.0125	0.1907	0.0489	0.0119	0.0608		882.8269	882.8269	0.0633		884.4105
Vendor	0.0430	1.2149	0.3084	2.6000e-003	0.0640	8.8800e-003	0.0729	0.0184	8.4900e-003	0.0269		277.0092	277.0092	0.0191		277.4875
Worker	0.1069	0.0770	1.0006	2.4500e-003	0.2236	1.7900e-003	0.2254	0.0593	1.6500e-003	0.0609		243.7440	243.7440	8.3300e-003		243.9523
Total	**0.2431**	**4.5158**	**1.9335**	**0.0132**	**0.4657**	**0.0232**	**0.4889**	**0.1266**	**0.0221**	**0.1486**		**1,403.5801**	**1,403.5801**	**0.0908**		**1,405.8503**

3.9 Phase 2 Excavation, Pipe Laying, Backfill - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.3000e-003	0.0000	7.3000e-003	1.1100e-003	0.0000	1.1100e-003			0.0000			0.0000
Off-Road	3.5376	28.2831	26.7339	0.0417		1.8376	1.8376		1.7737	1.7737		4,022.5859	4,022.5859	0.7671		4,041.7643
Total	**3.5376**	**28.2831**	**26.7339**	**0.0417**	**7.3000e-003**	**1.8376**	**1.8449**	**1.1100e-003**	**1.7737**	**1.7748**		**4,022.5859**	**4,022.5859**	**0.7671**		**4,041.7643**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0587	2.0301	0.3933	5.1400e-003	0.1306	7.8600e-003	0.1384	0.0353	7.5200e-003	0.0428		555.9264	555.9264	0.0399		556.9237
Vendor	0.0430	1.2149	0.3084	2.6000e-003	0.0640	8.8800e-003	0.0729	0.0184	8.4900e-003	0.0269		277.0092	277.0092	0.0191		277.4875
Worker	0.1069	0.0770	1.0006	2.4500e-003	0.2236	1.7900e-003	0.2254	0.0593	1.6500e-003	0.0609		243.7440	243.7440	8.3300e-003		243.9523
Total	**0.2085**	**3.3221**	**1.7022**	**0.0102**	**0.4181**	**0.0185**	**0.4366**	**0.1130**	**0.0177**	**0.1306**		**1,076.6797**	**1,076.6797**	**0.0674**		**1,078.3635**

3.9 Phase 2 Excavation, Pipe Laying, Backfill - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.3000e-003	0.0000	7.3000e-003	1.1100e-003	0.0000	1.1100e-003			0.0000			0.0000
Off-Road	3.1307	25.5412	26.4895	0.0417		1.5761	1.5761		1.5216	1.5216		3,992.7303	3,992.7303	0.7429		4,011.3033
Total	**3.1307**	**25.5412**	**26.4895**	**0.0417**	**7.3000e-003**	**1.5761**	**1.5834**	**1.1100e-003**	**1.5216**	**1.5227**		**3,992.7303**	**3,992.7303**	**0.7429**		**4,011.3033**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0556	1.9218	0.3845	5.0700e-003	0.5215	7.1800e-003	0.5286	0.1312	6.8700e-003	0.1381		549.2171	549.2171	0.0394		550.2018
Vendor	0.0390	1.1479	0.2831	2.5700e-003	0.0640	7.6100e-003	0.0716	0.0184	7.2800e-003	0.0257		274.5122	274.5122	0.0185		274.9739
Worker	0.0971	0.0680	0.8959	2.3700e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		236.0723	236.0723	7.4000e-003		236.2573
Total	**0.1917**	**3.1377**	**1.5634**	**0.0100**	**0.8090**	**0.0165**	**0.8255**	**0.2089**	**0.0158**	**0.2247**		**1,059.8016**	**1,059.8016**	**0.0653**		**1,061.4330**

3.10 Phase 2 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0464	8.6415	8.8029	0.0137		0.5411	0.5411		0.5203	0.5203		1,327.5332	1,327.5332	0.2636		1,334.1221
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0464**	**8.6415**	**8.8029**	**0.0137**		**0.5411**	**0.5411**		**0.5203**	**0.5203**		**1,327.5332**	**1,327.5332**	**0.2636**		**1,334.1221**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0390	1.1479	0.2831	2.5700e-003	0.0640	7.6100e-003	0.0716	0.0184	7.2800e-003	0.0257		274.5122	274.5122	0.0185		274.9739
Worker	0.0971	0.0680	0.8959	2.3700e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		236.0723	236.0723	7.4000e-003		236.2573
Total	**0.1361**	**1.2159**	**1.1789**	**4.9400e-003**	**0.2875**	**9.3600e-003**	**0.2969**	**0.0777**	**8.8900e-003**	**0.0866**		**510.5845**	**510.5845**	**0.0259**		**511.2312**

3.11 Phase 2 Pump Station - 2019

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	0.7648	8.6889	5.5563	0.0109		0.3840	0.3840		0.3533	0.3533		1,082.3362	1,082.3362	0.3424		1,090.8972
Total	**0.7648**	**8.6889**	**5.5563**	**0.0109**		**0.3840**	**0.3840**		**0.3533**	**0.3533**		**1,082.3362**	**1,082.3362**	**0.3424**		**1,090.8972**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	2.9000e-004	9.9200e-003	1.9900e-003	3.0000e-005	5.8000e-004	4.0000e-005	6.2000e-004	1.6000e-004	4.0000e-005	2.0000e-004		2.8363	2.8363	2.0000e-004		2.8414
Vendor	0.0390	1.1479	0.2831	2.5700e-003	0.0640	7.6100e-003	0.0716	0.0184	7.2800e-003	0.0257		274.5122	274.5122	0.0185		274.9739
Worker	0.0971	0.0680	0.8959	2.3700e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		236.0723	236.0723	7.4000e-003		236.2573
Total	**0.1364**	**1.2258**	**1.1809**	**4.9700e-003**	**0.2881**	**9.4000e-003**	**0.2975**	**0.0779**	**8.9300e-003**	**0.0868**		**513.4208**	**513.4208**	**0.0261**		**514.0726**

3.12 Phase 2 De-mobilization - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2854	2.4781	1.9970	2.5400e-003		0.2011	0.2011		0.1850	0.1850		251.6470	251.6470	0.0796		253.6375
Total	**0.2854**	**2.4781**	**1.9970**	**2.5400e-003**		**0.2011**	**0.2011**		**0.1850**	**0.1850**		**251.6470**	**251.6470**	**0.0796**		**253.6375**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0215	0.7444	0.1489	1.9600e-003	0.0437	2.7800e-003	0.0465	0.0120	2.6600e-003	0.0146		212.7249	212.7249	0.0153		213.1063
Vendor	0.0390	1.1479	0.2831	2.5700e-003	0.0640	7.6100e-003	0.0716	0.0184	7.2800e-003	0.0257		274.5122	274.5122	0.0185		274.9739
Worker	0.0971	0.0680	0.8959	2.3700e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		236.0723	236.0723	7.4000e-003		236.2573
Total	**0.1576**	**1.9602**	**1.3278**	**6.9000e-003**	**0.3312**	**0.0121**	**0.3434**	**0.0897**	**0.0116**	**0.1012**		**723.3094**	**723.3094**	**0.0411**		**724.3375**

3.13 Phase 3 Mobilization - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0215	0.7444	0.1489	1.9600e-003	0.0437	2.7800e-003	0.0465	0.0120	2.6600e-003	0.0146		212.7249	212.7249	0.0153		213.1063
Vendor	0.0390	1.1479	0.2831	2.5700e-003	0.0640	7.6100e-003	0.0716	0.0184	7.2800e-003	0.0257		274.5122	274.5122	0.0185		274.9739
Worker	0.0971	0.0680	0.8959	2.3700e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		236.0723	236.0723	7.4000e-003		236.2573
Total	**0.1576**	**1.9602**	**1.3278**	**6.9000e-003**	**0.3312**	**0.0121**	**0.3434**	**0.0897**	**0.0116**	**0.1012**		**723.3094**	**723.3094**	**0.0411**		**724.3375**

3.14 Phase 3 Pavement Cutting - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.4930	0.0000	3.4930	0.5289	0.0000	0.5289			0.0000			0.0000
Off-Road	0.4620	3.5885	3.7022	6.2600e-003		0.2294	0.2294		0.2294	0.2294		592.6657	592.6657	0.0417		593.7086
Total	**0.4620**	**3.5885**	**3.7022**	**6.2600e-003**	**3.4930**	**0.2294**	**3.7224**	**0.5289**	**0.2294**	**0.7583**		**592.6657**	**592.6657**	**0.0417**		**593.7086**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0689	2.3820	0.4765	6.2800e-003	0.1397	8.9000e-003	0.1486	0.0383	8.5200e-003	0.0468		680.7198	680.7198	0.0488		681.9403
Vendor	0.0390	1.1479	0.2831	2.5700e-003	0.0640	7.6100e-003	0.0716	0.0184	7.2800e-003	0.0257		274.5122	274.5122	0.0185		274.9739
Worker	0.0971	0.0680	0.8959	2.3700e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		236.0723	236.0723	7.4000e-003		236.2573
Total	**0.2050**	**3.5978**	**1.6554**	**0.0112**	**0.4273**	**0.0183**	**0.4455**	**0.1160**	**0.0174**	**0.1334**		**1,191.3042**	**1,191.3042**	**0.0747**		**1,193.1715**

3.15 Phase 3 Excavation, Pipe Laying, Backfill - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0164	0.0000	0.0164	2.4800e-003	0.0000	2.4800e-003			0.0000			0.0000
Off-Road	3.1307	25.5412	26.4895	0.0417		1.5761	1.5761		1.5216	1.5216		3,992.7303	3,992.7303	0.7429		4,011.3033
Total	**3.1307**	**25.5412**	**26.4895**	**0.0417**	**0.0164**	**1.5761**	**1.5925**	**2.4800e-003**	**1.5216**	**1.5241**		**3,992.7303**	**3,992.7303**	**0.7429**		**4,011.3033**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.1245	4.3067	0.8615	0.0114	0.2526	0.0161	0.2687	0.0692	0.0154	0.0846		1,230.7657	1,230.7657	0.0883		1,232.9724
Vendor	0.0390	1.1479	0.2831	2.5700e-003	0.0640	7.6100e-003	0.0716	0.0184	7.2800e-003	0.0257		274.5122	274.5122	0.0185		274.9739
Worker	0.0971	0.0680	0.8959	2.3700e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		236.0723	236.0723	7.4000e-003		236.2573
Total	**0.2606**	**5.5225**	**2.0405**	**0.0163**	**0.5402**	**0.0255**	**0.5656**	**0.1469**	**0.0243**	**0.1712**		**1,741.3501**	**1,741.3501**	**0.1141**		**1,744.2036**

3.16 Phase 3 Paving - 2019

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	1.0464	8.6415	8.8029	0.0137		0.5411	0.5411		0.5203	0.5203		1,327.5332	1,327.5332	0.2636		1,334.1221
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0464**	**8.6415**	**8.8029**	**0.0137**		**0.5411**	**0.5411**		**0.5203**	**0.5203**		**1,327.5332**	**1,327.5332**	**0.2636**		**1,334.1221**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0390	1.1479	0.2831	2.5700e-003	0.0640	7.6100e-003	0.0716	0.0184	7.2800e-003	0.0257		274.5122	274.5122	0.0185		274.9739
Worker	0.0971	0.0680	0.8959	2.3700e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		236.0723	236.0723	7.4000e-003		236.2573
Total	**0.1361**	**1.2159**	**1.1789**	**4.9400e-003**	**0.2875**	**9.3600e-003**	**0.2969**	**0.0777**	**8.8900e-003**	**0.0866**		**510.5845**	**510.5845**	**0.0259**		**511.2312**

3.17 Phase 3 Pump Station - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7648	8.6889	5.5563	0.0109		0.3840	0.3840		0.3533	0.3533		1,082.3362	1,082.3362	0.3424		1,090.8972
Total	**0.7648**	**8.6889**	**5.5563**	**0.0109**		**0.3840**	**0.3840**		**0.3533**	**0.3533**		**1,082.3362**	**1,082.3362**	**0.3424**		**1,090.8972**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.4000e-004	4.9600e-003	9.9000e-004	1.0000e-005	2.9000e-004	2.0000e-005	3.1000e-004	8.0000e-005	2.0000e-005	1.0000e-004		1.4182	1.4182	1.0000e-004		1.4207
Vendor	0.0390	1.1479	0.2831	2.5700e-003	0.0640	7.6100e-003	0.0716	0.0184	7.2800e-003	0.0257		274.5122	274.5122	0.0185		274.9739
Worker	0.0971	0.0680	0.8959	2.3700e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		236.0723	236.0723	7.4000e-003		236.2573
Total	**0.1362**	**1.2208**	**1.1799**	**4.9500e-003**	**0.2878**	**9.3800e-003**	**0.2972**	**0.0778**	**8.9100e-003**	**0.0867**		**512.0026**	**512.0026**	**0.0260**		**512.6519**

3.18 Phase 3 De-mobilization - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2854	2.4781	1.9970	2.5400e-003		0.2011	0.2011		0.1850	0.1850		251.6470	251.6470	0.0796		253.6375
Total	**0.2854**	**2.4781**	**1.9970**	**2.5400e-003**		**0.2011**	**0.2011**		**0.1850**	**0.1850**		**251.6470**	**251.6470**	**0.0796**		**253.6375**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0215	0.7444	0.1489	1.9600e-003	0.0437	2.7800e-003	0.0465	0.0120	2.6600e-003	0.0146		212.7249	212.7249	0.0153		213.1063
Vendor	0.0390	1.1479	0.2831	2.5700e-003	0.0640	7.6100e-003	0.0716	0.0184	7.2800e-003	0.0257		274.5122	274.5122	0.0185		274.9739
Worker	0.0971	0.0680	0.8959	2.3700e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		236.0723	236.0723	7.4000e-003		236.2573
Total	**0.1576**	**1.9602**	**1.3278**	**6.9000e-003**	**0.3312**	**0.0121**	**0.3434**	**0.0897**	**0.0116**	**0.1012**		**723.3094**	**723.3094**	**0.0411**		**724.3375**

Glendale Wastewater Project (Pasadena)

South Coast Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	0.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization Urban | **Wind Speed (m/s)** 2.2 | **Precipitation Freq (Days)** 31

Climate Zone 12 | **Operational Year** 2019

Utility Company Glendale Water & Power

CO2 Intensity (lb/MWhr) 1115.33 | **CH4 Intensity (lb/MWhr)** 0.029 | **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Installation of Pipeline

Construction Phase - Project Specific Information

Off-road Equipment - Project Specific Information

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	30.00
tblConstructionPhase	NumDays	0.00	56.00
tblConstructionPhase	NumDays	0.00	60.00

tblConstructionPhase	NumDays	0.00	138.00
tblConstructionPhase	NumDays	0.00	110.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	8.00
tblConstructionPhase	NumDays	0.00	8.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	10.00
tblConstructionPhase	NumDays	0.00	10.00
tblConstructionPhase	NumDays	0.00	2.00
tblConstructionPhase	NumDays	0.00	2.00
tblConstructionPhase	NumDays	0.00	2.00
tblConstructionPhase	NumDays	0.00	2.00
tblConstructionPhase	NumDays	0.00	2.00
tblConstructionPhase	NumDays	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	5.00
tblTripsAndVMT	HaulingTripNumber	0.00	1.00
tblTripsAndVMT	HaulingTripNumber	0.00	5.00
tblTripsAndVMT	HaulingTripNumber	0.00	5.00
tblTripsAndVMT	HaulingTripNumber	81.00	40.00

tblTripsAndVMT	HaulingTripNumber	0.00	810.00
tblTripsAndVMT	HaulingTripNumber	0.00	1.00
tblTripsAndVMT	HaulingTripNumber	0.00	5.00
tblTripsAndVMT	HaulingTripNumber	149.00	74.00
tblTripsAndVMT	HaulingTripNumber	0.00	550.00
tblTripsAndVMT	HaulingTripNumber	0.00	5.00
tblTripsAndVMT	HaulingTripNumber	0.00	5.00
tblTripsAndVMT	HaulingTripNumber	163.00	81.48
tblTripsAndVMT	HaulingTripNumber	0.00	710.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
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tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	0.00	40.00
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tblTripsAndVMT	WorkerTripNumber	3.00	20.00
tblTripsAndVMT	WorkerTripNumber	0.00	20.00

tblTripsAndVMT	WorkerTripNumber	3.00	20.00
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tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	0.00	20.00
tblTripsAndVMT	WorkerTripNumber	3.00	20.00
tblTripsAndVMT	WorkerTripNumber	3.00	40.00
tblTripsAndVMT	WorkerTripNumber	0.00	40.00
tblTripsAndVMT	WorkerTripNumber	8.00	40.00
tblTripsAndVMT	WorkerTripNumber	3.00	40.00
tblTripsAndVMT	WorkerTripNumber	0.00	20.00
tblTripsAndVMT	WorkerTripNumber	3.00	20.00
tblTripsAndVMT	WorkerTripNumber	0.00	20.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	3.8539	31.6437	29.1593	0.0520	4.8793	1.8564	5.1698	0.7948	1.7917	1.9471	0.0000	5,087.0981	5,087.0981	0.8370	0.0000	5,107.8206
2019	3.4059	31.1305	28.5416	0.0576	3.9202	1.6020	4.1682	0.6449	1.5463	1.7477	0.0000	5,691.3751	5,691.3751	0.8614	0.0000	5,712.9112
Maximum	**3.8539**	**31.6437**	**29.1593**	**0.0576**	**4.8793**	**1.8564**	**5.1698**	**0.7948**	**1.7917**	**1.9471**	**0.0000**	**5,691.3751**	**5,691.3751**	**0.8614**	**0.0000**	**5,712.9112**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Phase 1 Mobilization	Site Preparation	1/1/2018	1/2/2018	5	2	11
2	Phase 1 Pavement Cutting	Demolition	1/3/2018	1/12/2018	5	8	12
3	Phase 1 Excavation, Pipe Laying, Backfill	Building Construction	1/13/2018	7/25/2018	5	138	13
4	Phase 1 Paving	Paving	7/26/2018	8/8/2018	5	10	14
5	Phase 1 De-mobilization	Site Preparation	8/9/2018	8/12/2018	5	2	15
6	Phase 2 Mobilization	Site Preparation	8/13/2018	8/14/2018	5	2	16
7	Phase 2 Pavement Cutting	Demolition	8/15/2018	8/24/2018	5	8	17
8	Phase 2 Excavation, Pipe Laying, Backfill	Building Construction	8/25/2018	1/27/2019	5	110	18
9	Phase 2 Paving	Paving	1/28/2019	2/8/2019	5	10	19
10	Phase 2 Pump Station	Building Construction	2/9/2019	3/22/2019	5	30	20
11	Phase 2 De-mobilization	Site Preparation	3/23/2019	3/26/2019	5	2	21
12	Phase 3 Mobilization	Site Preparation	3/27/2019	3/28/2019	5	2	22
13	Phase 3 Pavement Cutting	Demolition	3/29/2019	4/4/2019	5	5	23
14	Phase 3 Excavation, Pipe Laying, Backfill	Building Construction	4/5/2019	6/21/2019	5	56	24
15	Phase 3 Paving	Paving	6/22/2019	6/28/2019	5	5	25
16	Phase 3 Pump Station	Building Construction	6/29/2019	9/20/2019	5	60	26
17	Phase 3 De-mobilization	Site Preparation	9/21/2019	9/24/2019	5	2	27

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Phase 1 Mobilization					
Phase 1 Mobilization					
Phase 1 Pavement Cutting	Concrete/Industrial Saws	1	8.00	81	0.73
Phase 1 Excavation, Pipe Laying, Backfill	Air Compressors	2	8.00	78	0.48
Phase 1 Excavation, Pipe Laying, Backfill	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Phase 1 Excavation, Pipe Laying, Backfill	Excavators	2	8.00	158	0.38
Phase 1 Excavation, Pipe Laying, Backfill	Forklifts	1	8.00	89	0.20
Phase 1 Excavation, Pipe Laying, Backfill	Generator Sets	2	8.00	84	0.74
Phase 1 Excavation, Pipe Laying, Backfill	Welders	1	8.00	46	0.45
Phase 1 Paving	Crushing/Proc. Equipment	1	8.00	85	0.78
Phase 1 Paving	Paving Equipment	1	8.00	132	0.36
Phase 1 Paving	Rollers	1	8.00	80	0.38
Phase 1 De-mobilization	Sweepers/Scrubbers	1	8.00	64	0.46
Phase 2 Mobilization					
Phase 2 Mobilization					
Phase 2 Pavement Cutting	Concrete/Industrial Saws	1	8.00	81	0.73
Phase 2 Excavation, Pipe Laying, Backfill	Air Compressors	2	8.00	78	0.48
Phase 2 Excavation, Pipe Laying, Backfill	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Phase 2 Excavation, Pipe Laying, Backfill	Excavators	2	8.00	158	0.38
Phase 2 Excavation, Pipe Laying, Backfill	Forklifts	1	8.00	89	0.20
Phase 2 Excavation, Pipe Laying, Backfill	Generator Sets	2	8.00	84	0.74
Phase 2 Excavation, Pipe Laying, Backfill	Welders	1	8.00	46	0.45
Phase 2 Paving	Crushing/Proc. Equipment	1	8.00	85	0.78
Phase 2 Paving	Paving Equipment	1	8.00	132	0.36
Phase 2 Paving	Rollers	1	8.00	80	0.38
Phase 2 Pump Station	Excavators	1	8.00	158	0.38
Phase 2 Pump Station	Cranes	1	8.00	231	0.29
Phase 2 De-mobilization	Sweepers/Scrubbers	1	8.00	64	0.46

Phase 3 Mobilization					
Phase 3 Mobilization					
Phase 3 Pavement Cutting	Concrete/Industrial Saws	1	8.00	81	0.73
Phase 3 Excavation, Pipe Laying, Backfill	Air Compressors	2	8.00	78	0.48
Phase 3 Excavation, Pipe Laying, Backfill	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Phase 3 Excavation, Pipe Laying, Backfill	Excavators	2	8.00	158	0.38
Phase 3 Excavation, Pipe Laying, Backfill	Forklifts	1	8.00	89	0.20
Phase 3 Excavation, Pipe Laying, Backfill	Generator Sets	2	8.00	84	0.74
Phase 3 Excavation, Pipe Laying, Backfill	Welders	1	8.00	46	0.45
Phase 3 Paving	Crushing/Proc. Equipment	1	8.00	85	0.78
Phase 3 Paving	Paving Equipment	1	8.00	132	0.36
Phase 3 Paving	Rollers	1	8.00	80	0.38
Phase 3 Pump Station	Excavators	1	8.00	158	0.38
Phase 3 Pump Station	Cranes	1	8.00	231	0.29
Phase 3 De-mobilization	Sweepers/Scrubbers	1	8.00	64	0.46

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Phase 1 Mobilization	0	40.00	10.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 Pavement Cutting	1	40.00	10.00	74.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 Excavation, Pipe Laying, Backfill	10	40.00	10.00	550.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 Paving	3	40.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 De-mobilization	1	40.00	10.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Mobilization	0	20.00	10.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Pavement Cutting	1	20.00	10.00	81.48	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Excavation, Pipe Laying, Backfill	10	20.00	10.00	710.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Paving	3	20.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Pump Station	2	20.00	10.00	1.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 De-mobilization	1	20.00	10.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Phase 3 Mobilization	0	20.00	10.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 Pavement Cutting	1	20.00	10.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 Excavation, Pipe Laying, Backfill	10	20.00	10.00	810.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 Paving	3	20.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 Pump Station	2	20.00	10.00	1.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 De-mobilization	1	20.00	10.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Phase 1 Mobilization - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0233	0.7973	0.1638	1.9600e-003	0.0437	3.1000e-003	0.0468	0.0120	2.9700e-003	0.0149		211.7483	211.7483	0.0161		212.1505
Vendor	0.0448	1.2175	0.3406	2.5300e-003	0.0640	9.0200e-003	0.0730	0.0184	8.6300e-003	0.0271		269.6413	269.6413	0.0205		270.1529
Worker	0.2343	0.1693	1.8237	4.5900e-003	0.4471	3.5900e-003	0.4507	0.1186	3.3100e-003	0.1219		457.3010	457.3010	0.0157		457.6925
Total	**0.3025**	**2.1841**	**2.3280**	**9.0800e-003**	**0.5548**	**0.0157**	**0.5705**	**0.1490**	**0.0149**	**0.1639**		**938.6907**	**938.6907**	**0.0522**		**939.9959**

3.3 Phase 1 Pavement Cutting - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.0252	0.0000	4.0252	0.6094	0.0000	0.6094			0.0000			0.0000
Off-Road	0.5194	3.9150	3.7241	6.2600e-003		0.2670	0.2670		0.2670	0.2670		592.6646	592.6646	0.0459		593.8118
Total	**0.5194**	**3.9150**	**3.7241**	**6.2600e-003**	**4.0252**	**0.2670**	**4.2921**	**0.6094**	**0.2670**	**0.8764**		**592.6646**	**592.6646**	**0.0459**		**593.8118**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0864	2.9501	0.6062	7.2400e-003	0.1616	0.0115	0.1731	0.0443	0.0110	0.0553		783.4689	783.4689	0.0595		784.9568
Vendor	0.0448	1.2175	0.3406	2.5300e-003	0.0640	9.0200e-003	0.0730	0.0184	8.6300e-003	0.0271		269.6413	269.6413	0.0205		270.1529
Worker	0.2343	0.1693	1.8237	4.5900e-003	0.4471	3.5900e-003	0.4507	0.1186	3.3100e-003	0.1219		457.3010	457.3010	0.0157		457.6925
Total	**0.3655**	**4.3369**	**2.7704**	**0.0144**	**0.6727**	**0.0241**	**0.6968**	**0.1813**	**0.0229**	**0.2042**		**1,510.4112**	**1,510.4112**	**0.0956**		**1,512.8021**

3.4 Phase 1 Excavation, Pipe Laying, Backfill - 2018

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					4.5100e-003	0.0000	4.5100e-003	6.8000e-004	0.0000	6.8000e-004			0.0000			0.0000
Off-Road	3.5376	28.2831	26.7339	0.0417		1.8376	1.8376		1.7737	1.7737		4,022.5859	4,022.5859	0.7671		4,041.7643
Total	**3.5376**	**28.2831**	**26.7339**	**0.0417**	**4.5100e-003**	**1.8376**	**1.8421**	**6.8000e-004**	**1.7737**	**1.7744**		**4,022.5859**	**4,022.5859**	**0.7671**		**4,041.7643**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0372	1.2711	0.2612	3.1200e-003	0.0696	4.9500e-003	0.0746	0.0191	4.7300e-003	0.0238		337.5698	337.5698	0.0256		338.2109
Vendor	0.0448	1.2175	0.3406	2.5300e-003	0.0640	9.0200e-003	0.0730	0.0184	8.6300e-003	0.0271		269.6413	269.6413	0.0205		270.1529
Worker	0.2343	0.1693	1.8237	4.5900e-003	0.4471	3.5900e-003	0.4507	0.1186	3.3100e-003	0.1219		457.3010	457.3010	0.0157		457.6925
Total	**0.3164**	**2.6579**	**2.4254**	**0.0102**	**0.5807**	**0.0176**	**0.5983**	**0.1561**	**0.0167**	**0.1727**		**1,064.5121**	**1,064.5121**	**0.0618**		**1,066.0563**

3.5 Phase 1 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1739	9.6902	8.8718	0.0137		0.6338	0.6338		0.6097	0.6097		1,338.4416	1,338.4416	0.2706		1,345.2067
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1739**	**9.6902**	**8.8718**	**0.0137**		**0.6338**	**0.6338**		**0.6097**	**0.6097**		**1,338.4416**	**1,338.4416**	**0.2706**		**1,345.2067**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0448	1.2175	0.3406	2.5300e-003	0.0640	9.0200e-003	0.0730	0.0184	8.6300e-003	0.0271		269.6413	269.6413	0.0205		270.1529
Worker	0.2343	0.1693	1.8237	4.5900e-003	0.4471	3.5900e-003	0.4507	0.1186	3.3100e-003	0.1219		457.3010	457.3010	0.0157		457.6925
Total	**0.2792**	**1.3868**	**2.1642**	**7.1200e-003**	**0.5111**	**0.0126**	**0.5237**	**0.1370**	**0.0119**	**0.1489**		**726.9423**	**726.9423**	**0.0361**		**727.8454**

3.6 Phase 1 De-mobilization - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3113	2.6668	2.0155	2.5400e-003		0.2224	0.2224		0.2046	0.2046		255.7499	255.7499	0.0796		257.7404
Total	**0.3113**	**2.6668**	**2.0155**	**2.5400e-003**		**0.2224**	**0.2224**		**0.2046**	**0.2046**		**255.7499**	**255.7499**	**0.0796**		**257.7404**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0233	0.7973	0.1638	1.9600e-003	0.0437	3.1000e-003	0.0468	0.0120	2.9700e-003	0.0149		211.7483	211.7483	0.0161		212.1505
Vendor	0.0448	1.2175	0.3406	2.5300e-003	0.0640	9.0200e-003	0.0730	0.0184	8.6300e-003	0.0271		269.6413	269.6413	0.0205		270.1529
Worker	0.2343	0.1693	1.8237	4.5900e-003	0.4471	3.5900e-003	0.4507	0.1186	3.3100e-003	0.1219		457.3010	457.3010	0.0157		457.6925
Total	**0.3025**	**2.1841**	**2.3280**	**9.0800e-003**	**0.5548**	**0.0157**	**0.5705**	**0.1490**	**0.0149**	**0.1639**		**938.6907**	**938.6907**	**0.0522**		**939.9959**

3.7 Phase 2 Mobilization - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0233	0.7973	0.1638	1.9600e-003	0.0437	3.1000e-003	0.0468	0.0120	2.9700e-003	0.0149		211.7483	211.7483	0.0161		212.1505
Vendor	0.0448	1.2175	0.3406	2.5300e-003	0.0640	9.0200e-003	0.0730	0.0184	8.6300e-003	0.0271		269.6413	269.6413	0.0205		270.1529
Worker	0.1172	0.0847	0.9118	2.3000e-003	0.2236	1.7900e-003	0.2254	0.0593	1.6500e-003	0.0609		228.6505	228.6505	7.8300e-003		228.8463
Total	**0.1854**	**2.0995**	**1.4162**	**6.7900e-003**	**0.3312**	**0.0139**	**0.3451**	**0.0897**	**0.0133**	**0.1029**		**710.0402**	**710.0402**	**0.0444**		**711.1496**

3.8 Phase 2 Pavement Cutting - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.4135	0.0000	4.4135	0.6683	0.0000	0.6683			0.0000			0.0000
Off-Road	0.5194	3.9150	3.7241	6.2600e-003		0.2670	0.2670		0.2670	0.2670		592.6646	592.6646	0.0459		593.8118
Total	**0.5194**	**3.9150**	**3.7241**	**6.2600e-003**	**4.4135**	**0.2670**	**4.6805**	**0.6683**	**0.2670**	**0.9352**		**592.6646**	**592.6646**	**0.0459**		**593.8118**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0957	3.2690	0.6718	8.0300e-003	0.1782	0.0127	0.1909	0.0489	0.0122	0.0610		868.1682	868.1682	0.0660		869.8169
Vendor	0.0448	1.2175	0.3406	2.5300e-003	0.0640	9.0200e-003	0.0730	0.0184	8.6300e-003	0.0271		269.6413	269.6413	0.0205		270.1529
Worker	0.1172	0.0847	0.9118	2.3000e-003	0.2236	1.7900e-003	0.2254	0.0593	1.6500e-003	0.0609		228.6505	228.6505	7.8300e-003		228.8463
Total	**0.2577**	**4.5712**	**1.9241**	**0.0129**	**0.4657**	**0.0235**	**0.4893**	**0.1266**	**0.0225**	**0.1490**		**1,366.4600**	**1,366.4600**	**0.0942**		**1,368.8161**

3.9 Phase 2 Excavation, Pipe Laying, Backfill - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.3000e-003	0.0000	7.3000e-003	1.1100e-003	0.0000	1.1100e-003			0.0000			0.0000
Off-Road	3.5376	28.2831	26.7339	0.0417		1.8376	1.8376		1.7737	1.7737		4,022.5859	4,022.5859	0.7671		4,041.7643
Total	**3.5376**	**28.2831**	**26.7339**	**0.0417**	**7.3000e-003**	**1.8376**	**1.8449**	**1.1100e-003**	**1.7737**	**1.7748**		**4,022.5859**	**4,022.5859**	**0.7671**		**4,041.7643**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0603	2.0585	0.4230	5.0500e-003	0.1306	8.0100e-003	0.1386	0.0353	7.6600e-003	0.0429		546.6957	546.6957	0.0415		547.7340
Vendor	0.0448	1.2175	0.3406	2.5300e-003	0.0640	9.0200e-003	0.0730	0.0184	8.6300e-003	0.0271		269.6413	269.6413	0.0205		270.1529
Worker	0.1172	0.0847	0.9118	2.3000e-003	0.2236	1.7900e-003	0.2254	0.0593	1.6500e-003	0.0609		228.6505	228.6505	7.8300e-003		228.8463
Total	**0.2223**	**3.3607**	**1.6754**	**9.8800e-003**	**0.4181**	**0.0188**	**0.4369**	**0.1130**	**0.0179**	**0.1309**		**1,044.9875**	**1,044.9875**	**0.0698**		**1,046.7331**

3.9 Phase 2 Excavation, Pipe Laying, Backfill - 2019

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					7.3000e-003	0.0000	7.3000e-003	1.1100e-003	0.0000	1.1100e-003			0.0000			0.0000
Off-Road	3.1307	25.5412	26.4895	0.0417		1.5761	1.5761		1.5216	1.5216		3,992.7303	3,992.7303	0.7429		4,011.3033
Total	**3.1307**	**25.5412**	**26.4895**	**0.0417**	**7.3000e-003**	**1.5761**	**1.5834**	**1.1100e-003**	**1.5216**	**1.5227**		**3,992.7303**	**3,992.7303**	**0.7429**		**4,011.3033**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0571	1.9480	0.4126	4.9800e-003	0.5215	7.3200e-003	0.5288	0.1312	7.0000e-003	0.1382		539.9829	539.9829	0.0410		541.0074
Vendor	0.0407	1.1493	0.3135	2.5000e-003	0.0640	7.7300e-003	0.0717	0.0184	7.4000e-003	0.0258		267.1389	267.1389	0.0198		267.6328
Worker	0.1066	0.0747	0.8139	2.2200e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		221.4335	221.4335	6.9400e-003		221.6070
Total	**0.2044**	**3.1720**	**1.5401**	**9.7000e-003**	**0.8090**	**0.0168**	**0.8258**	**0.2089**	**0.0160**	**0.2249**		**1,028.5553**	**1,028.5553**	**0.0677**		**1,030.2472**

3.10 Phase 2 Paving - 2019

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	1.0464	8.6415	8.8029	0.0137		0.5411	0.5411		0.5203	0.5203		1,327.5332	1,327.5332	0.2636		1,334.1221
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0464**	**8.6415**	**8.8029**	**0.0137**		**0.5411**	**0.5411**		**0.5203**	**0.5203**		**1,327.5332**	**1,327.5332**	**0.2636**		**1,334.1221**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0407	1.1493	0.3135	2.5000e-003	0.0640	7.7300e-003	0.0717	0.0184	7.4000e-003	0.0258		267.1389	267.1389	0.0198		267.6328
Worker	0.1066	0.0747	0.8139	2.2200e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		221.4335	221.4335	6.9400e-003		221.6070
Total	**0.1473**	**1.2240**	**1.1274**	**4.7200e-003**	**0.2875**	**9.4800e-003**	**0.2970**	**0.0777**	**9.0100e-003**	**0.0867**		**488.5724**	**488.5724**	**0.0267**		**489.2398**

3.11 Phase 2 Pump Station - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7648	8.6889	5.5563	0.0109		0.3840	0.3840		0.3533	0.3533		1,082.3362	1,082.3362	0.3424		1,090.8972
Total	**0.7648**	**8.6889**	**5.5563**	**0.0109**		**0.3840**	**0.3840**		**0.3533**	**0.3533**		**1,082.3362**	**1,082.3362**	**0.3424**		**1,090.8972**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.9000e-004	0.0101	2.1300e-003	3.0000e-005	5.8000e-004	4.0000e-005	6.2000e-004	1.6000e-004	4.0000e-005	2.0000e-004		2.7886	2.7886	2.1000e-004		2.7939
Vendor	0.0407	1.1493	0.3135	2.5000e-003	0.0640	7.7300e-003	0.0717	0.0184	7.4000e-003	0.0258		267.1389	267.1389	0.0198		267.6328
Worker	0.1066	0.0747	0.8139	2.2200e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		221.4335	221.4335	6.9400e-003		221.6070
Total	**0.1476**	**1.2341**	**1.1296**	**4.7500e-003**	**0.2881**	**9.5200e-003**	**0.2976**	**0.0779**	**9.0500e-003**	**0.0869**		**491.3610**	**491.3610**	**0.0269**		**492.0338**

3.12 Phase 2 De-mobilization - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2854	2.4781	1.9970	2.5400e-003		0.2011	0.2011		0.1850	0.1850		251.6470	251.6470	0.0796		253.6375
Total	**0.2854**	**2.4781**	**1.9970**	**2.5400e-003**		**0.2011**	**0.2011**		**0.1850**	**0.1850**		**251.6470**	**251.6470**	**0.0796**		**253.6375**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0221	0.7545	0.1598	1.9300e-003	0.0437	2.8300e-003	0.0465	0.0120	2.7100e-003	0.0147		209.1483	209.1483	0.0159		209.5451
Vendor	0.0407	1.1493	0.3135	2.5000e-003	0.0640	7.7300e-003	0.0717	0.0184	7.4000e-003	0.0258		267.1389	267.1389	0.0198		267.6328
Worker	0.1066	0.0747	0.8139	2.2200e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		221.4335	221.4335	6.9400e-003		221.6070
Total	**0.1694**	**1.9785**	**1.2873**	**6.6500e-003**	**0.3312**	**0.0123**	**0.3435**	**0.0897**	**0.0117**	**0.1014**		**697.7207**	**697.7207**	**0.0426**		**698.7849**

3.13 Phase 3 Mobilization - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0221	0.7545	0.1598	1.9300e-003	0.0437	2.8300e-003	0.0465	0.0120	2.7100e-003	0.0147		209.1483	209.1483	0.0159		209.5451
Vendor	0.0407	1.1493	0.3135	2.5000e-003	0.0640	7.7300e-003	0.0717	0.0184	7.4000e-003	0.0258		267.1389	267.1389	0.0198		267.6328
Worker	0.1066	0.0747	0.8139	2.2200e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		221.4335	221.4335	6.9400e-003		221.6070
Total	**0.1694**	**1.9785**	**1.2873**	**6.6500e-003**	**0.3312**	**0.0123**	**0.3435**	**0.0897**	**0.0117**	**0.1014**		**697.7207**	**697.7207**	**0.0426**		**698.7849**

3.14 Phase 3 Pavement Cutting - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.4930	0.0000	3.4930	0.5289	0.0000	0.5289			0.0000			0.0000
Off-Road	0.4620	3.5885	3.7022	6.2600e-003		0.2294	0.2294		0.2294	0.2294		592.6657	592.6657	0.0417		593.7086
Total	**0.4620**	**3.5885**	**3.7022**	**6.2600e-003**	**3.4930**	**0.2294**	**3.7224**	**0.5289**	**0.2294**	**0.7583**		**592.6657**	**592.6657**	**0.0417**		**593.7086**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0707	2.4144	0.5114	6.1800e-003	0.1397	9.0700e-003	0.1488	0.0383	8.6800e-003	0.0470		669.2746	669.2746	0.0508		670.5443
Vendor	0.0407	1.1493	0.3135	2.5000e-003	0.0640	7.7300e-003	0.0717	0.0184	7.4000e-003	0.0258		267.1389	267.1389	0.0198		267.6328
Worker	0.1066	0.0747	0.8139	2.2200e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		221.4335	221.4335	6.9400e-003		221.6070
Total	**0.2180**	**3.6384**	**1.6389**	**0.0109**	**0.4273**	**0.0186**	**0.4458**	**0.1160**	**0.0177**	**0.1337**		**1,157.8470**	**1,157.8470**	**0.0775**		**1,159.7841**

3.15 Phase 3 Excavation, Pipe Laying, Backfill - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0164	0.0000	0.0164	2.4800e-003	0.0000	2.4800e-003			0.0000			0.0000
Off-Road	3.1307	25.5412	26.4895	0.0417		1.5761	1.5761		1.5216	1.5216		3,992.7303	3,992.7303	0.7429		4,011.3033
Total	**3.1307**	**25.5412**	**26.4895**	**0.0417**	**0.0164**	**1.5761**	**1.5925**	**2.4800e-003**	**1.5216**	**1.5241**		**3,992.7303**	**3,992.7303**	**0.7429**		**4,011.3033**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.1279	4.3653	0.9247	0.0112	0.2526	0.0164	0.2690	0.0692	0.0157	0.0849		1,210.0724	1,210.0724	0.0918		1,212.3681
Vendor	0.0407	1.1493	0.3135	2.5000e-003	0.0640	7.7300e-003	0.0717	0.0184	7.4000e-003	0.0258		267.1389	267.1389	0.0198		267.6328
Worker	0.1066	0.0747	0.8139	2.2200e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		221.4335	221.4335	6.9400e-003		221.6070
Total	**0.2752**	**5.5893**	**2.0521**	**0.0159**	**0.5402**	**0.0259**	**0.5661**	**0.1469**	**0.0247**	**0.1716**		**1,698.6448**	**1,698.6448**	**0.1185**		**1,701.6079**

3.16 Phase 3 Paving - 2019

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	1.0464	8.6415	8.8029	0.0137		0.5411	0.5411		0.5203	0.5203		1,327.5332	1,327.5332	0.2636		1,334.1221
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0464**	**8.6415**	**8.8029**	**0.0137**		**0.5411**	**0.5411**		**0.5203**	**0.5203**		**1,327.5332**	**1,327.5332**	**0.2636**		**1,334.1221**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0407	1.1493	0.3135	2.5000e-003	0.0640	7.7300e-003	0.0717	0.0184	7.4000e-003	0.0258		267.1389	267.1389	0.0198		267.6328
Worker	0.1066	0.0747	0.8139	2.2200e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		221.4335	221.4335	6.9400e-003		221.6070
Total	**0.1473**	**1.2240**	**1.1274**	**4.7200e-003**	**0.2875**	**9.4800e-003**	**0.2970**	**0.0777**	**9.0100e-003**	**0.0867**		**488.5724**	**488.5724**	**0.0267**		**489.2398**

3.17 Phase 3 Pump Station - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7648	8.6889	5.5563	0.0109		0.3840	0.3840		0.3533	0.3533		1,082.3362	1,082.3362	0.3424		1,090.8972
Total	**0.7648**	**8.6889**	**5.5563**	**0.0109**		**0.3840**	**0.3840**		**0.3533**	**0.3533**		**1,082.3362**	**1,082.3362**	**0.3424**		**1,090.8972**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.5000e-004	5.0300e-003	1.0700e-003	1.0000e-005	2.9000e-004	2.0000e-005	3.1000e-004	8.0000e-005	2.0000e-005	1.0000e-004		1.3943	1.3943	1.1000e-004		1.3970
Vendor	0.0407	1.1493	0.3135	2.5000e-003	0.0640	7.7300e-003	0.0717	0.0184	7.4000e-003	0.0258		267.1389	267.1389	0.0198		267.6328
Worker	0.1066	0.0747	0.8139	2.2200e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		221.4335	221.4335	6.9400e-003		221.6070
Total	**0.1475**	**1.2290**	**1.1285**	**4.7300e-003**	**0.2878**	**9.5000e-003**	**0.2973**	**0.0778**	**9.0300e-003**	**0.0868**		**489.9667**	**489.9667**	**0.0268**		**490.6368**

3.18 Phase 3 De-mobilization - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2854	2.4781	1.9970	2.5400e-003		0.2011	0.2011		0.1850	0.1850		251.6470	251.6470	0.0796		253.6375
Total	**0.2854**	**2.4781**	**1.9970**	**2.5400e-003**		**0.2011**	**0.2011**		**0.1850**	**0.1850**		**251.6470**	**251.6470**	**0.0796**		**253.6375**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0221	0.7545	0.1598	1.9300e-003	0.0437	2.8300e-003	0.0465	0.0120	2.7100e-003	0.0147		209.1483	209.1483	0.0159		209.5451
Vendor	0.0407	1.1493	0.3135	2.5000e-003	0.0640	7.7300e-003	0.0717	0.0184	7.4000e-003	0.0258		267.1389	267.1389	0.0198		267.6328
Worker	0.1066	0.0747	0.8139	2.2200e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		221.4335	221.4335	6.9400e-003		221.6070
Total	**0.1694**	**1.9785**	**1.2873**	**6.6500e-003**	**0.3312**	**0.0123**	**0.3435**	**0.0897**	**0.0117**	**0.1014**		**697.7207**	**697.7207**	**0.0426**		**698.7849**

Appendix B

Biological Resources Assessment Memo

ESA
2121 Alton Parkway
Suite 100
Irvine, CA 92606
949.753.7001 phone
949.753.7002 fax
www.esassoc.com

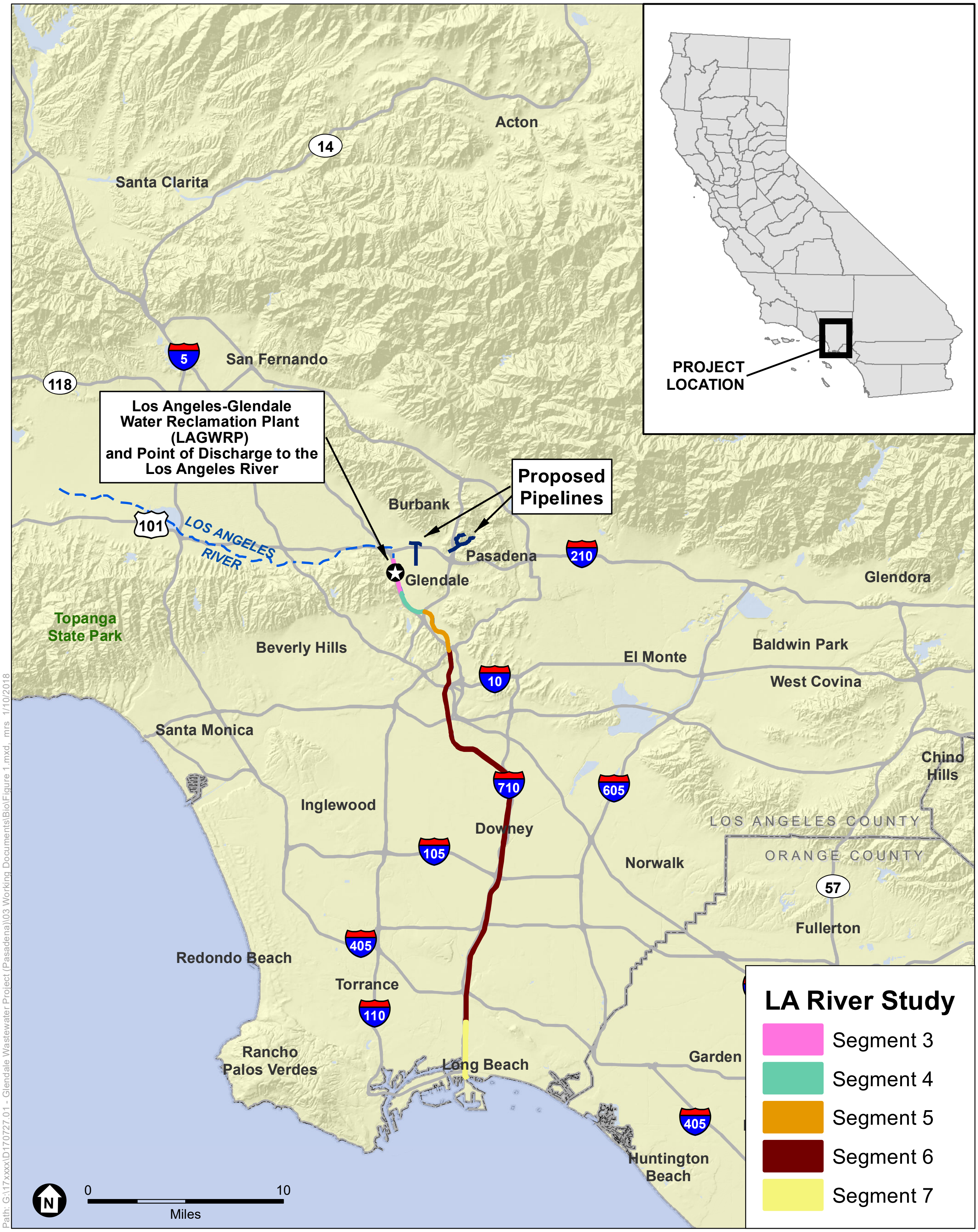
memorandum

date	June 4, 2018
to	Glendale Water and Power
cc	
from	Matthew South, Certified Wildlife Biologist, ESA
subject	Glendale Water and Power Wastewater Change Petition and Recycled Water Distribution Project Biological Resources Assessment

This memorandum summarizes the results of a site survey and literature search of the sensitive biological resources that may occur within the City of Glendale (City or City of Glendale), and the aquatic and riparian habitat within the Los Angeles River (River) between the Los Angeles-Glendale Water Reclamation Plant (LAGWRP) located at 4600 Colorado Boulevard and the River terminus at the Pacific Ocean. The survey was conducted by ESA on December 15 and 16, 2017 to evaluate the potential effects of the Glendale Water and Power (GWP) Wastewater Change Petition and Recycled Water Distribution Project. A brief description of the proposed project and methods used during the literature review and survey is provided below.

Proposed Project Description

The City is proposing to incrementally reduce discharges of tertiary-treated wastewater from the LAGWRP to the River, in order to allow for increased use of recycled water for irrigation and other non-potable uses within the Glendale Water & Power (GWP) and Pasadena Water & Power (PWP) service areas. The proposed project includes a reduction in wastewater discharges from the LAGWRP to the River to support increased application of recycled water in the GWP and PWP service areas, construction and operation of three new recycled water distribution pipelines and associated pump stations within the City of Glendale, and a pipeline connection to Pasadena's recycled water distribution system. Pursuant to the City's 2017 Wastewater Change Petition WW0097 and associated change in place of use filed with the State Water Resources Control Board (SWRCB) (Wastewater Change Petition), the proposed project would occur over time, and would not involve construction activities or other physical changes to the environment other than the aforementioned pipeline construction and the increased use of recycled water to offset and/or supplement potable water use. The City of Glendale's proposed recycled water distribution facilities are described as follows and are depicted below in **Figures 1** and **2**.

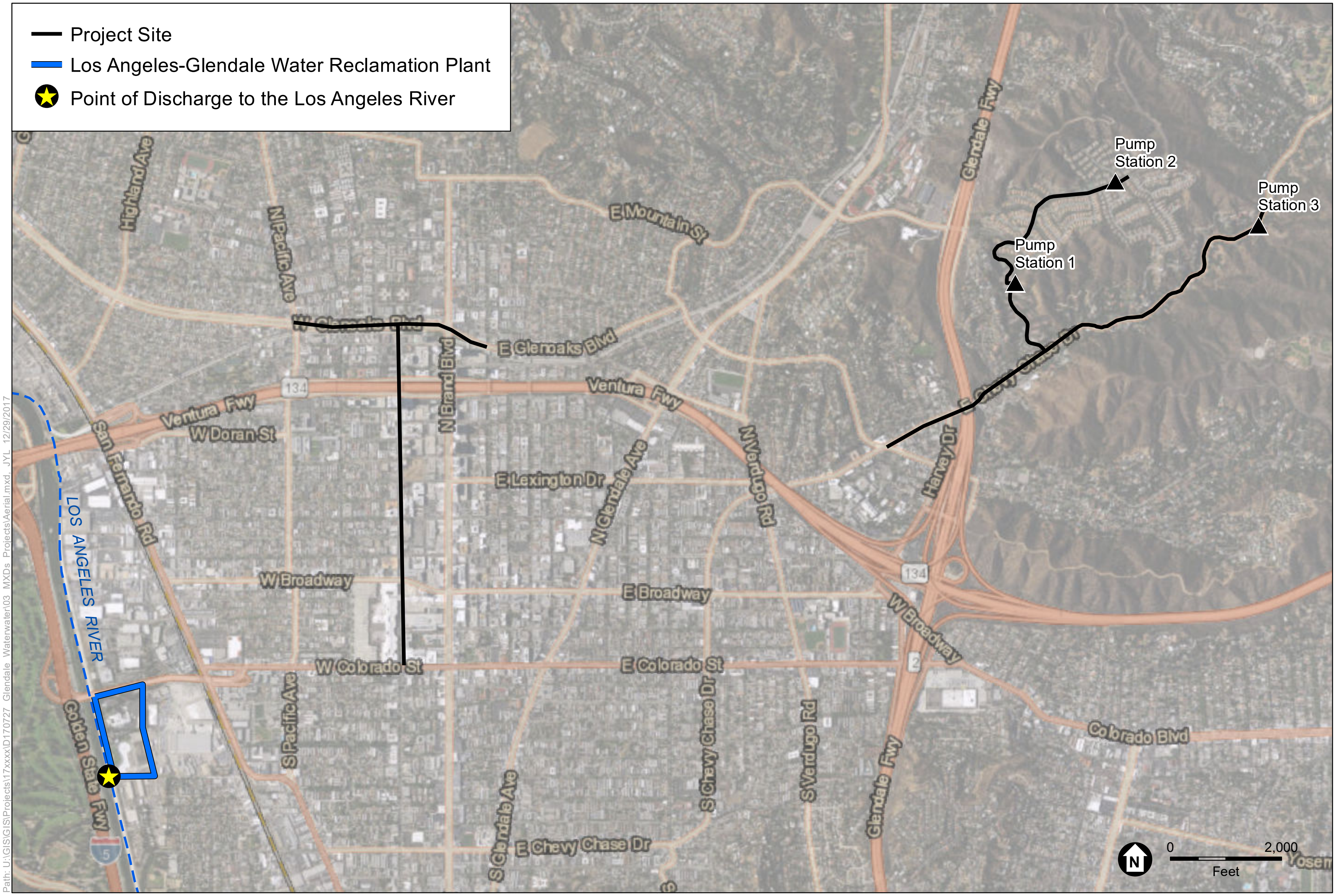


SOURCE: ESRI

Glendale 2017 Wastewater Change Petition Project

Figure 1
Regional Vicinity Map

ESA



SOURCE: ESRI

Glendale 2017 Wastewater Change Petition Project

Figure 2

Aerial Photograph

ESA

1. **Glendale Tee (*Total Recycled Water Demand: 50 AFY*) –** Extend current recycled system by installing 11,500 feet of 8-inch polyvinyl chloride (PVC) pipeline from Colorado Street along Central Avenue and connecting (loop) the Brand Park and Verdugo Scholl recycled water pipelines via Glenoaks Boulevard in order to provide recycled water to dual-plumbed office buildings for toilet flushing and to provide landscape irrigation water for commercial buildings in the Glendale downtown area.

2. **Chevy Chase Country Club (*Total Recycled Water Demand: 100 AFY*) –** Install a pump station and 11,000 linear feet of 8-inch PVC pipeline in Chevy Chase Drive and up Chevy Chase Canyon from Holly to Golf Club Drive.

3. **Camino San Rafael Homes Recycled Water (*Total Recycled Water Demand: 125 AFY*)** – This improvement consists of installing 8,300 feet of 8-inch PVC pipeline and two booster pumps stations. It would extend Glendale's recycled water distribution system to provide recycled water for common area irrigation to the Chevy Oaks and Camino San Rafael Homes.

Wastewater Reuse and Discharge Reduction

Pursuant to its Wastewater Change Petition, the City is proposing the sale of additional recycled water to customers within the Upper Los Angeles River Area (ULARA), which would reduce the City's current discharge of treated water to the River. This proposed change will not require the construction of additional facilities or grading-related activity at LAGWRP. The City will continue to discharge treated water at the same point of diversion, but in lesser quantities, as summarized below in **Table 1**, *Existing and Proposed LAGWRP Discharges*.

TABLE 1
EXISTING AND PROPOSED LAGWRP DISCHARGES

	million gallons per day (mgd)												Acre-Feet (AF)
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual**
Present	11.89	10.19	10.24	8.79	8.04	7.37	7.12	8.08	9.03	9.49	9.88	11.20	10,500
Proposed	10.98	8.97	8.78	5.91	4.07	2.44	1.27	2.85	4.70	6.49	7.87	10.15	7,000
Change	*0.91*	*1.22*	*1.46*	*2.88*	*3.97*	*4.93*	*5.85*	*5.23*	*4.33*	*3.00*	*2.01*	*1.05*	*3,500*

Source: City of Glendale, 2017

During normal operation, approximately 39 percent of Glendale’s share of LAGWRP's tertiary-treated effluent (approximately 2,000 AF in 2016) is currently beneficially reused for landscape irrigation and industrial uses and the remainder is discharged into the River (approximately 3,155 AF in 2016). As a result of increased demand for recycled water within the ULARA, the City is proposing to gradually increase its use of recycled water (from approximately 2,000 AFY to approximately 5,500 AFY), thereby reducing its discharge of treated wastewater into the channel over the next ten years from 10,500 AFY to approximately 7,000 AFY.

Study Area

The Study Area included the three proposed pipeline alignments and three pump stations described above and shown in Figures 1 and 2. The Study Area includes those areas that will be directly impacted by construction and the immediately surrounding areas within 50 feet that may be subjected to indirect impacts from construction (i.e. noise, vibration, and lighting).

The Study Area also included approximately 30 linear-miles of the River, between LAGWRP and the Pacific Ocean, with a focus on wetted areas. This Study Area is depicted in **Figure 3**, which also includes information on habitats within the River. The River is approximately 200-350 feet wide, and has water depths to 6.5 feet in the deepest part of the Study Area (FoLAR 2008). Geometry of the channel changes in the Study Area varying between trapezoidal and box and flow velocity varies from 15-20 feet per second, and up to 30 feet per second (FoLAR 2008).

ESA completed a study of the Los Angeles River in January of 2017 (ESA 2017) that included a Study Area divided into seven Segments, five of which (Segments 1-5) were assessed in a habitat assessment of the River as described in the US Army Corps of Engineers (USACE) *Los Angeles River Ecosystem Restoration Feasibility Study* (USACE 2013). These five segments correspond to Segment A of the Hydraulic Modeling Report (ESA 2018). LAGWRP occurs in the northern section of Segment 3, and to maintain consistency with the previous studies (ESA 2017), the Study Area within the River in this analysis includes Segments 3-7 (see Figure 1 above); Segments 1 and 2 will not be discussed any further in this memo as they are upstream of the Project and therefore will not be impacted by the Project as the River flows downstream, towards the ocean. Segments 3, 4, and 5 are soft bottom with trapezoidal concrete slopes, and Segment 7 is soft bottom with boulder rip-rap reinforced slopes. Segment 6, the longest segment, is concrete lined and varies in shape between box and trapezoidal (shown in Pages 8-27 of **Figure 3**). Segment B of the Hydraulic Modeling Report Study Area includes the southern half of Segment 6 and all of Segment 7 of the Biological Resources Assessment Study Area. The River segment number scheme for this Biological Resources Assessment is consistent with the earlier ESA biological study of the River, as this conforms best to the resources present. Based on a visual inspection during the December 16 survey, the composition of substrate in the soft bottom Segments was estimated to be about 80 percent boulders, large rocks, and cobble; and 20 percent gravel and sand. The Study Area Segments are described below in **Table 2**.

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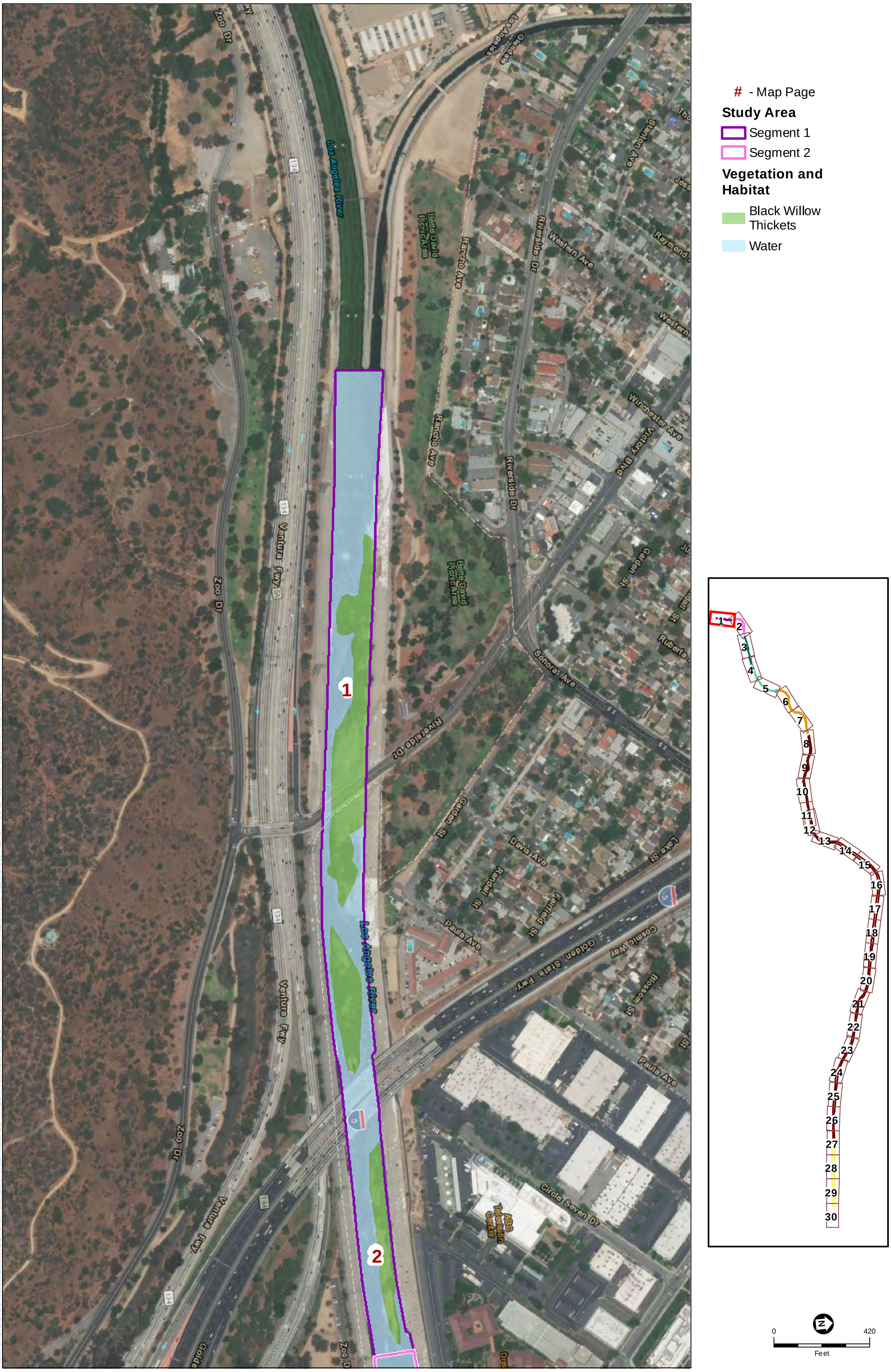


SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 1

\# - Map Page

Study Area

Segment 1

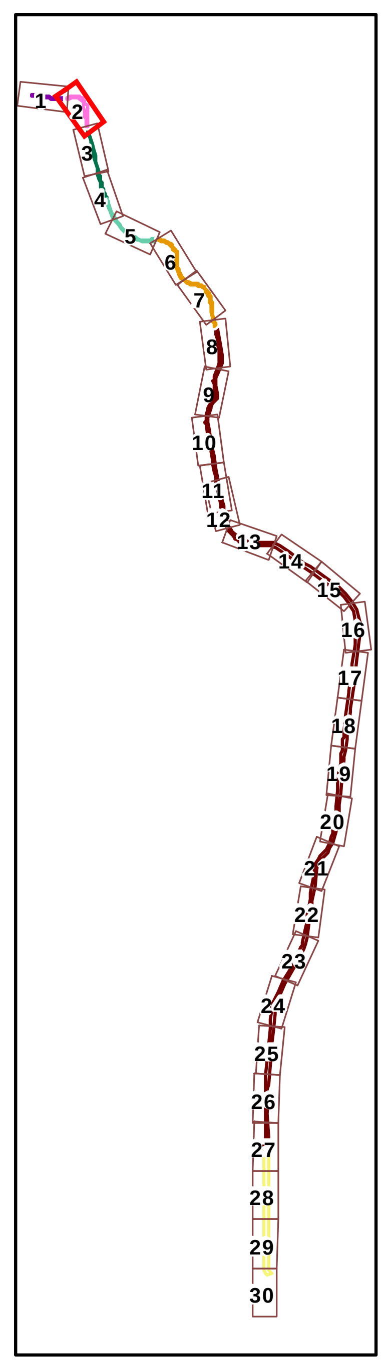
Segment 2

Segment 3

Vegetation and Habitat

Black Willow Thickets

Water



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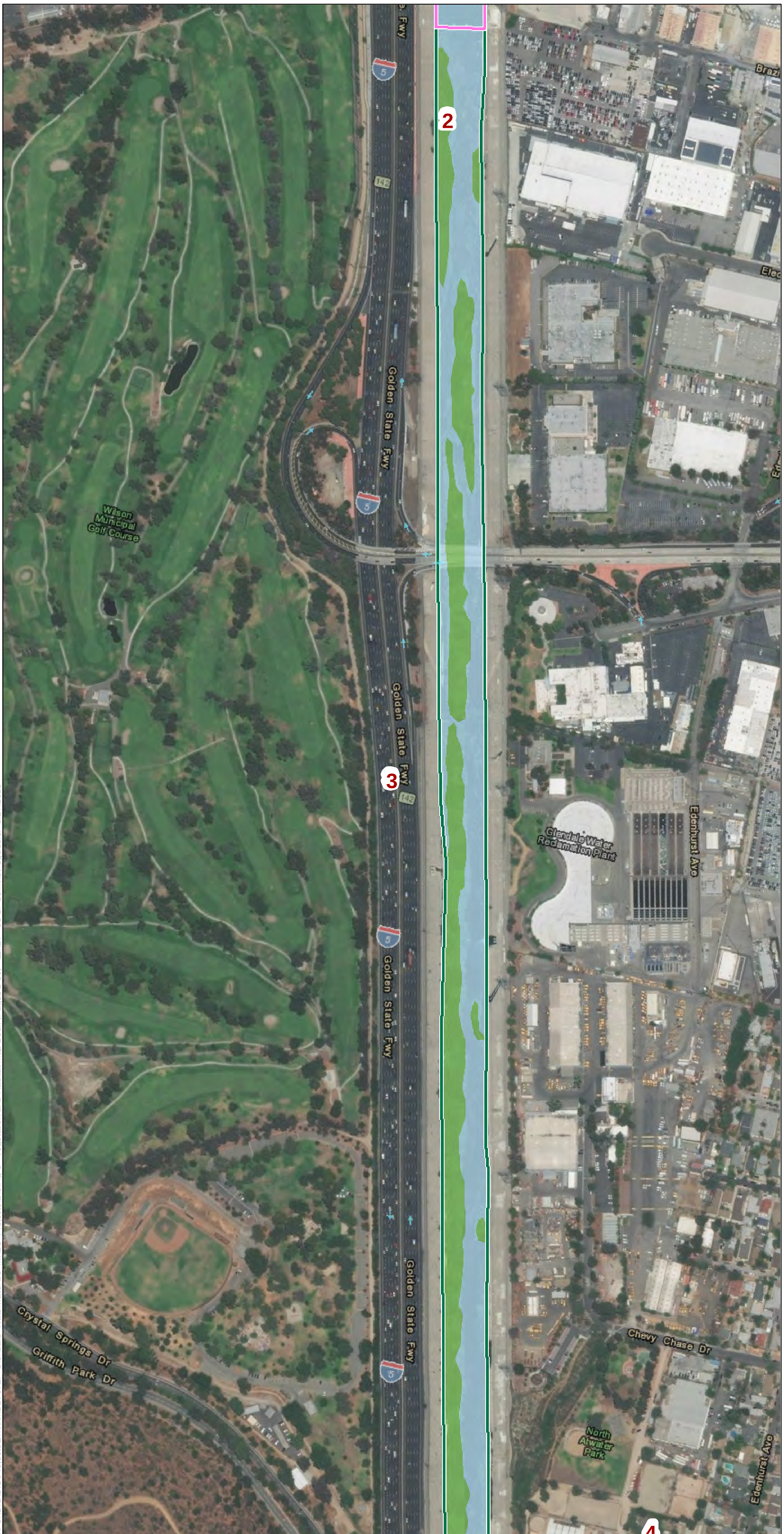
SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 2



\# - Map Page

Study Area

Segment 2

Segment 3

Vegetation and Habitat

Black Willow Thickets

Water

0 420

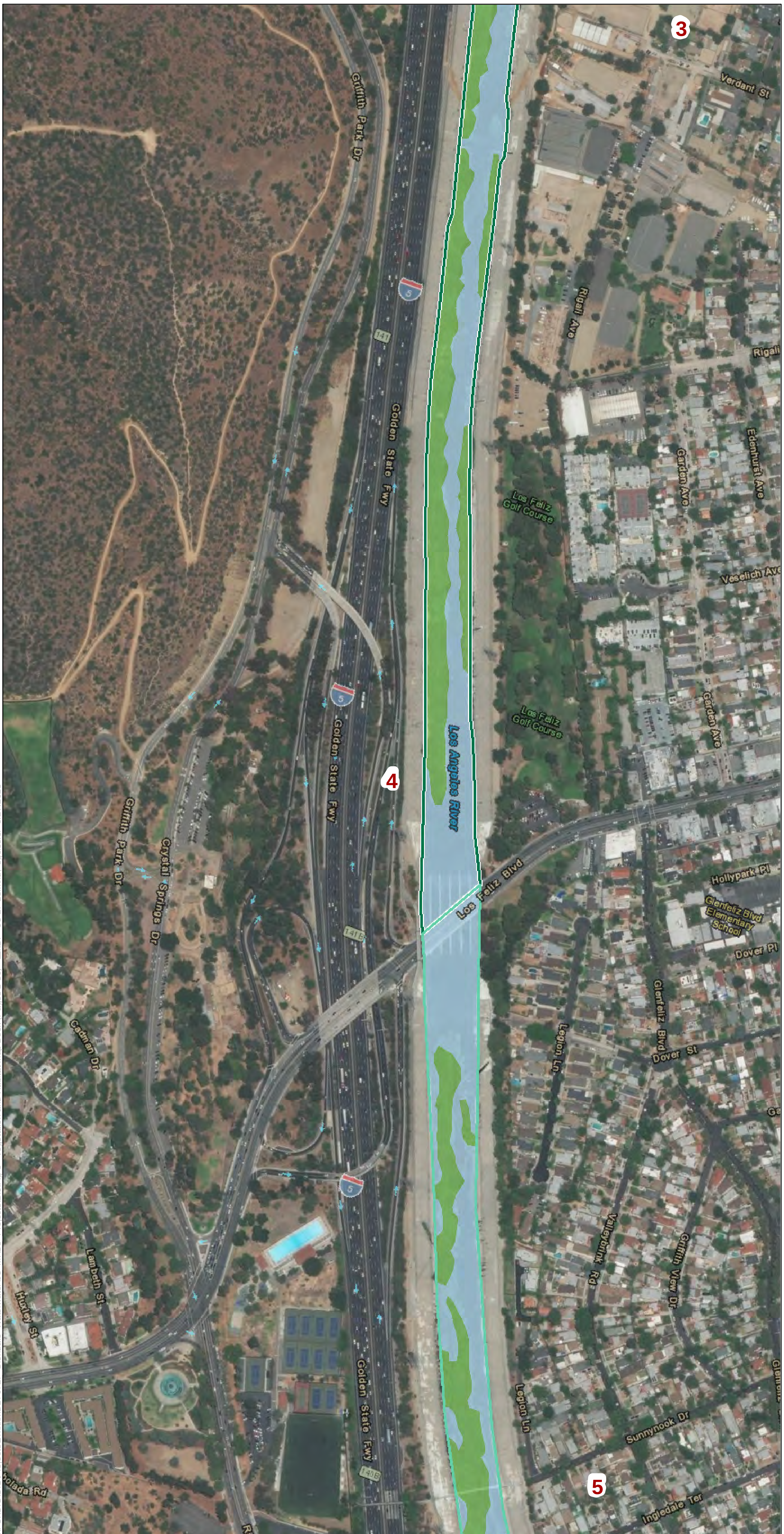
Feet

SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 3



- Map Page

Study Area

Segment 3

Segment 4

Vegetation and Habitat

Black Willow Thickets

Water

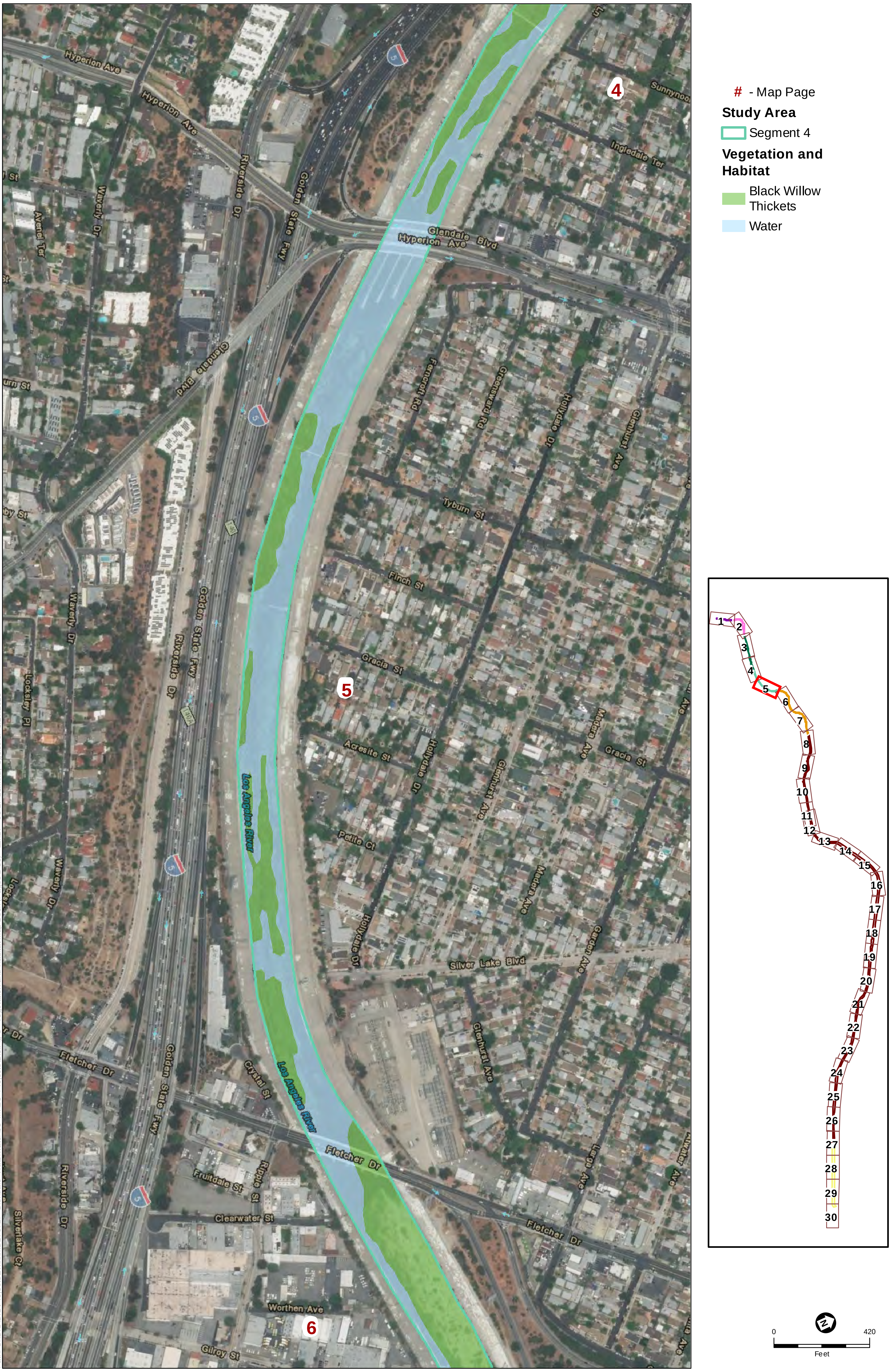
0 420
Feet

SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 4

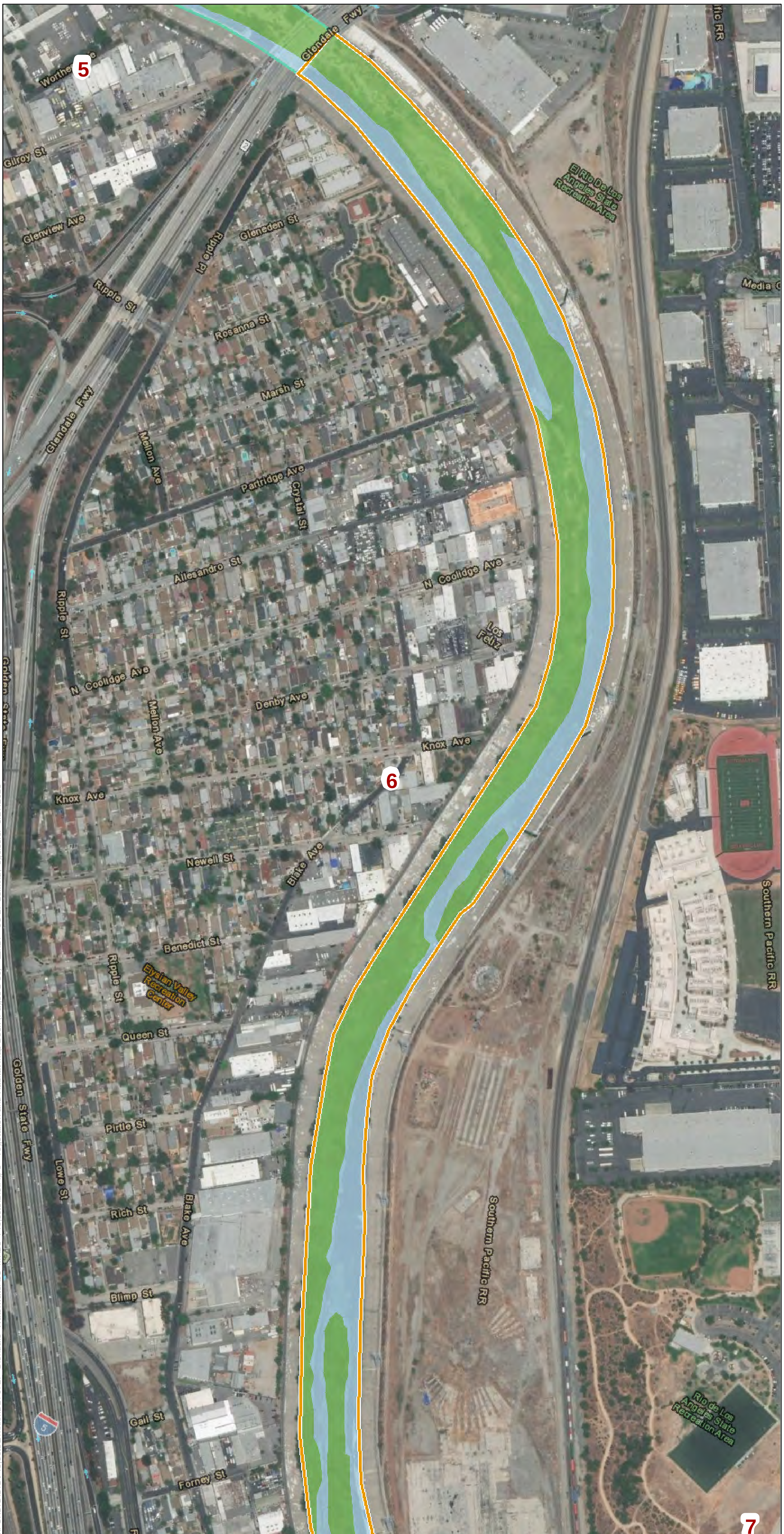


SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 5



\# - Map Page

Study Area

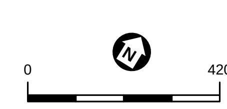
Segment 4

Segment 5

Vegetation and Habitat

Black Willow Thickets

Water

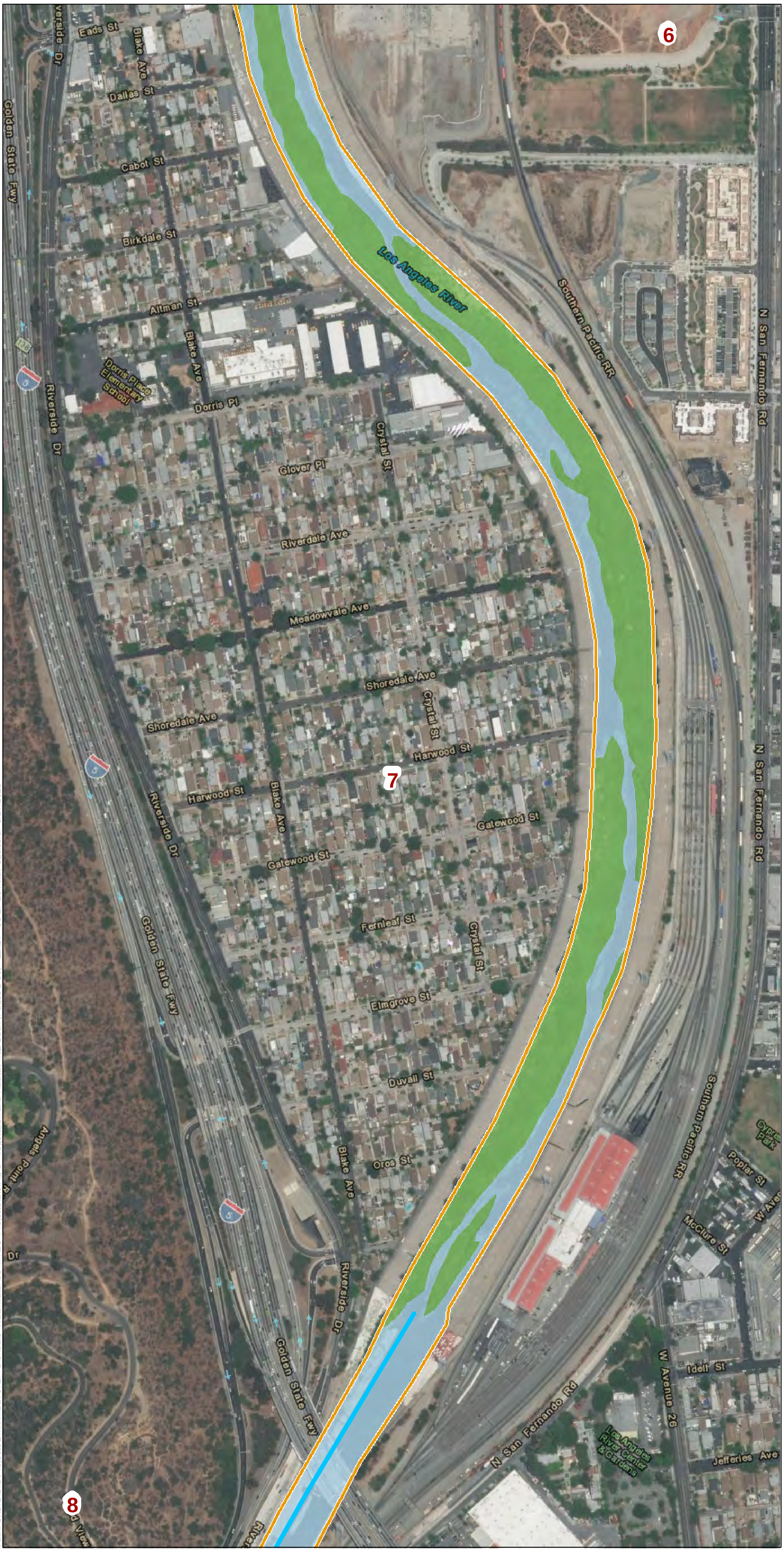


SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 6



- Map Page

Study Area

Segment 5

Vegetation and Habitat

Black Willow Thickets

Water

Low Flow Channel

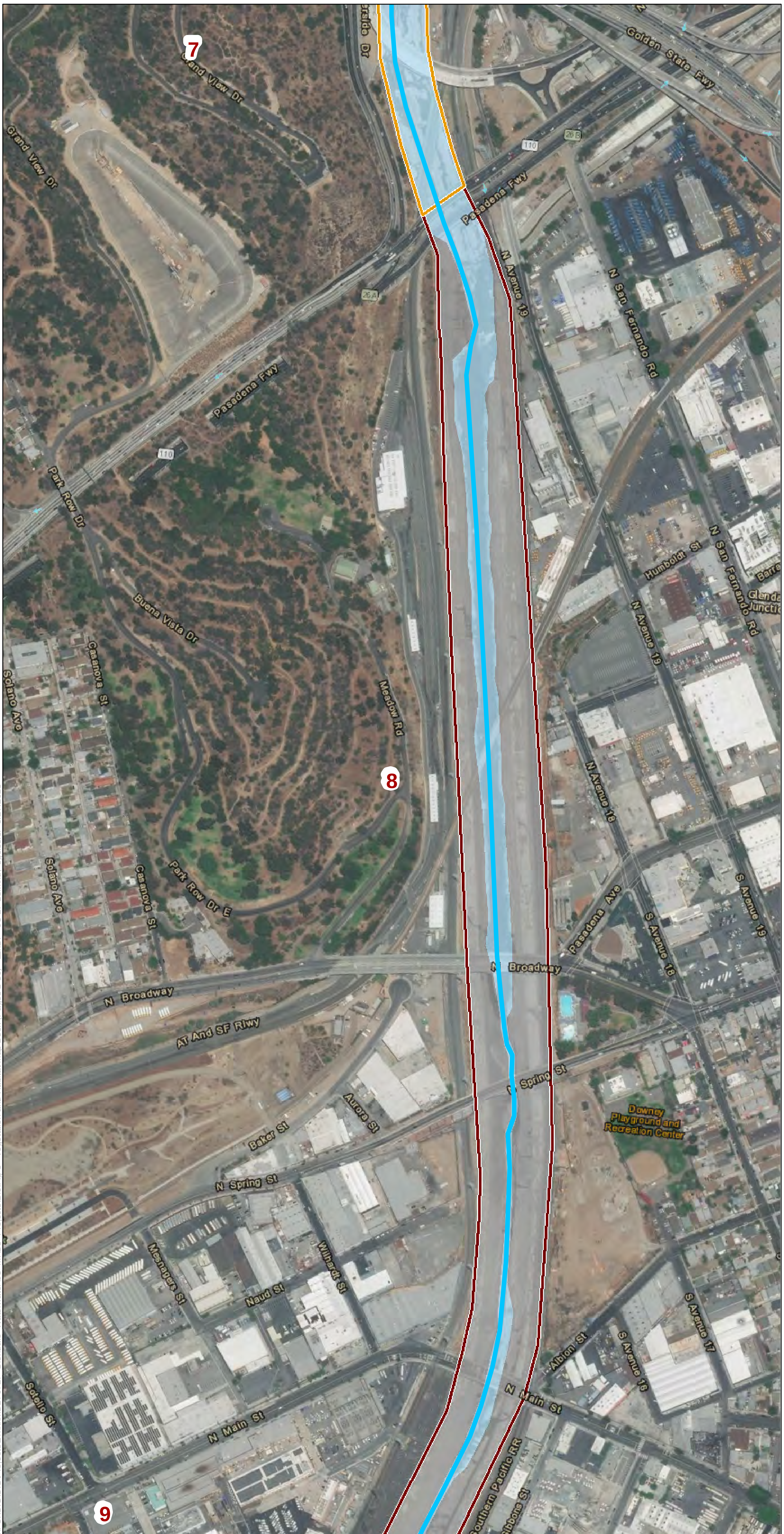
0 420
Feet

SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 7



- Map Page

Study Area

Segment 5

Segment 6

Vegetation and Habitat

Concrete

Water

Low Flow Channel

0 420

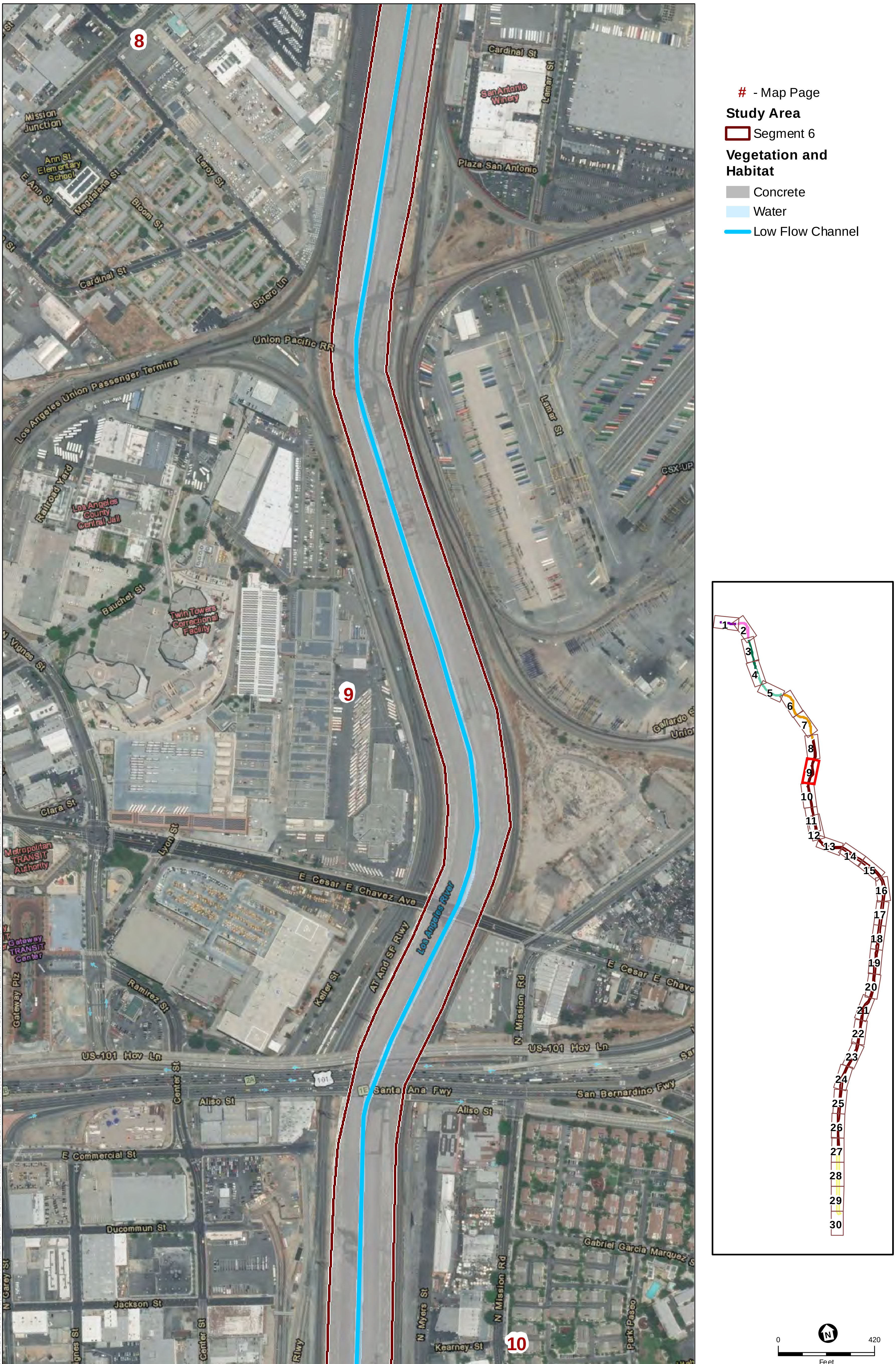
Feet

SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 8



SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 9

- Map Page

Study Area

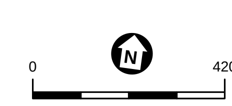
Segment 6

Vegetation and Habitat

Concrete

Water

Low Flow Channel

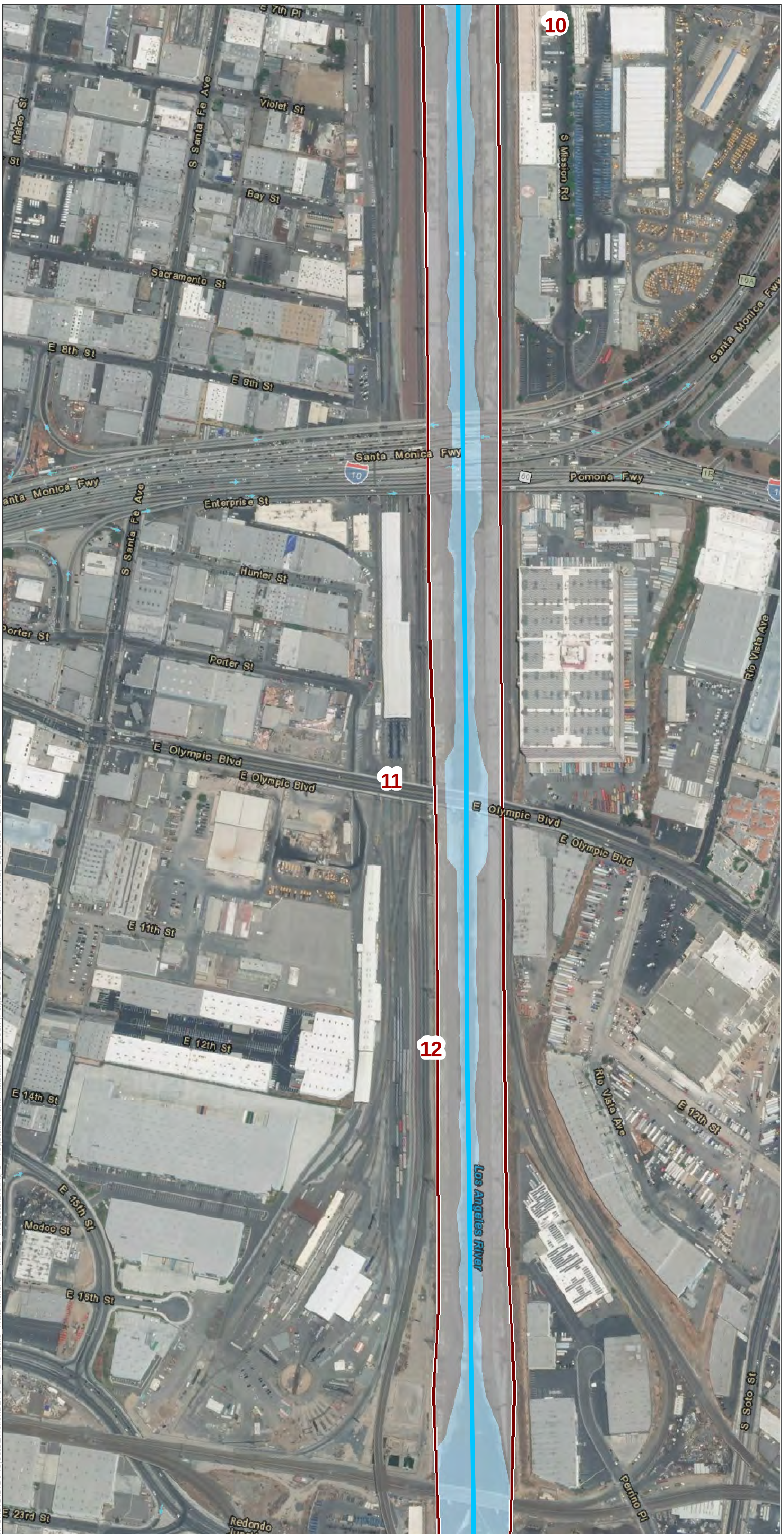


SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 10



\# - Map Page

Study Area

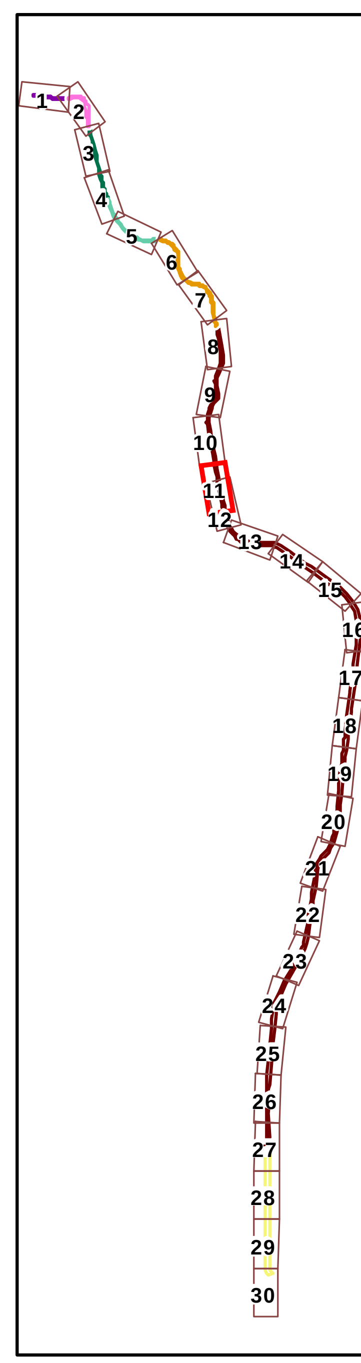
Segment 6

Vegetation and Habitat

Concrete

Water

Low Flow Channel



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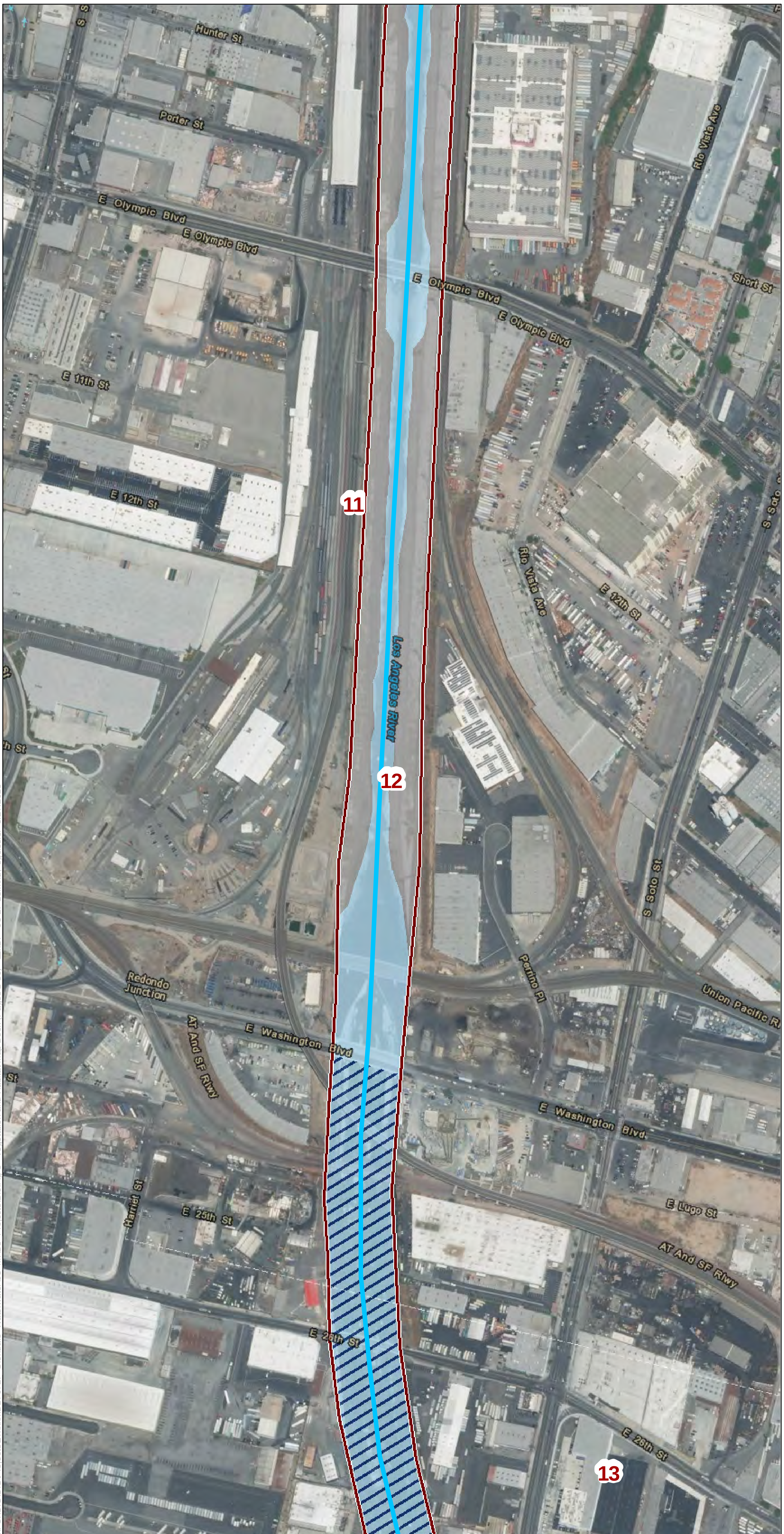
SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 11



\# - Map Page

Study Area

Segment 6

Vegetation and Habitat

Concrete

Water

Water-Sheet Flow

Low Flow Channel

0 420
Feet

SOURCE: DigitalGlobe (2016-07-09), Aerial.

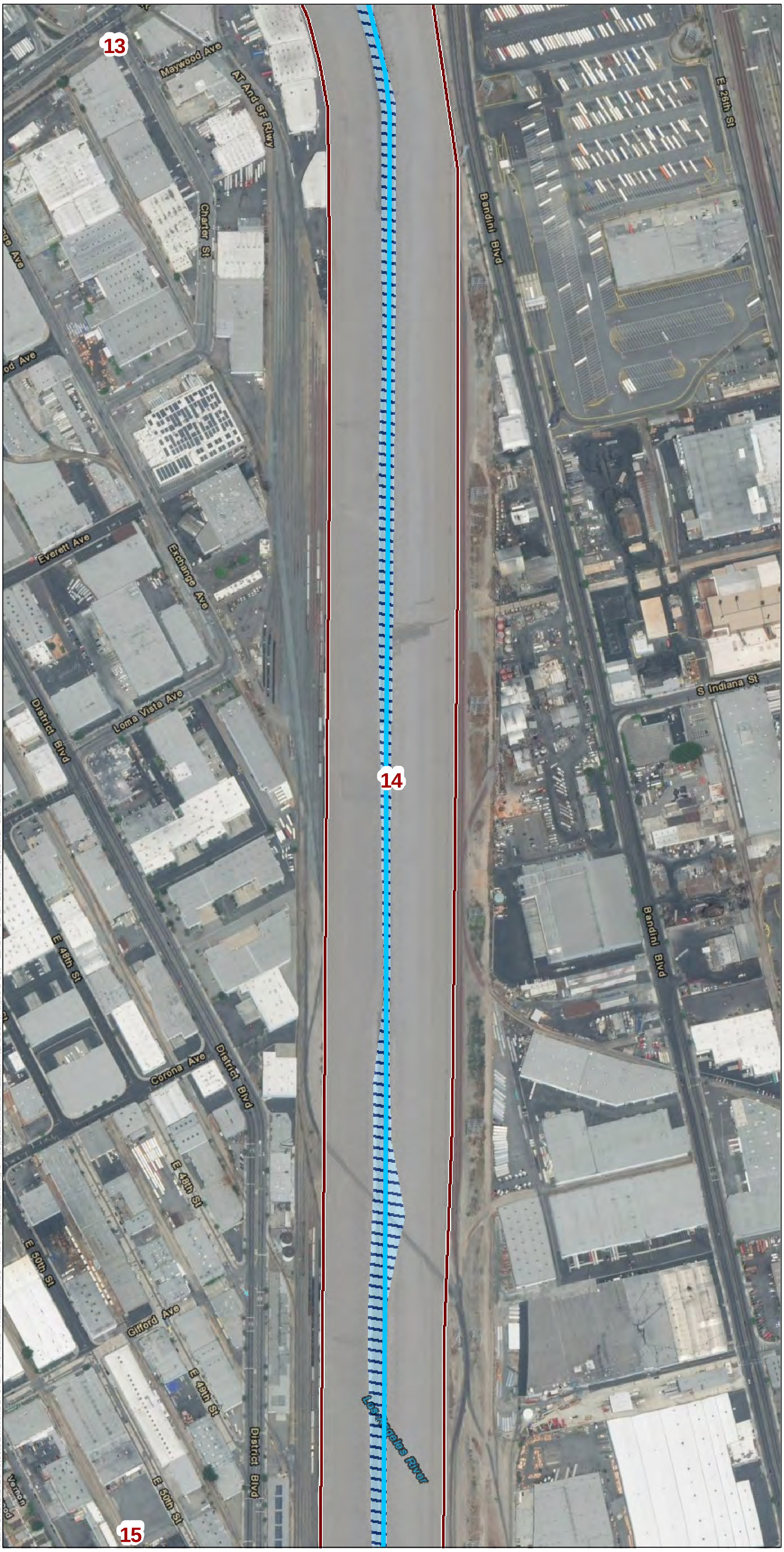
Glendale 2017 Wastewater Change Petition Project

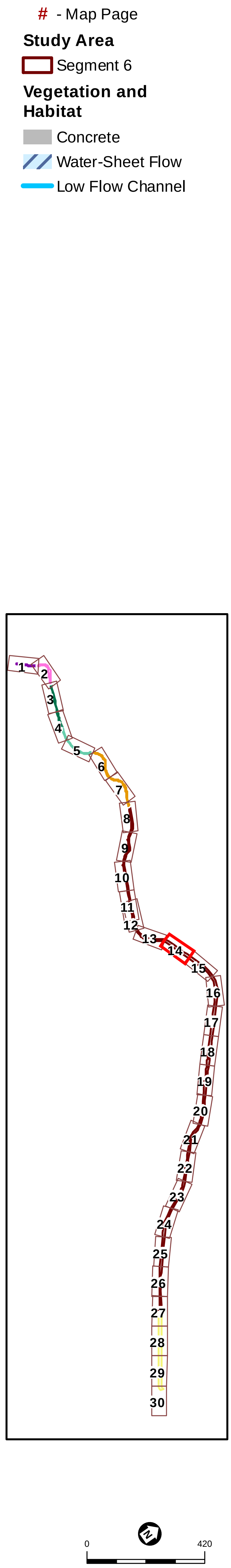
Figure 3

Vegetation and Habitat Map Book - Page 12

SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project
Figure 3
Vegetation and Habitat Map Book - Page 13



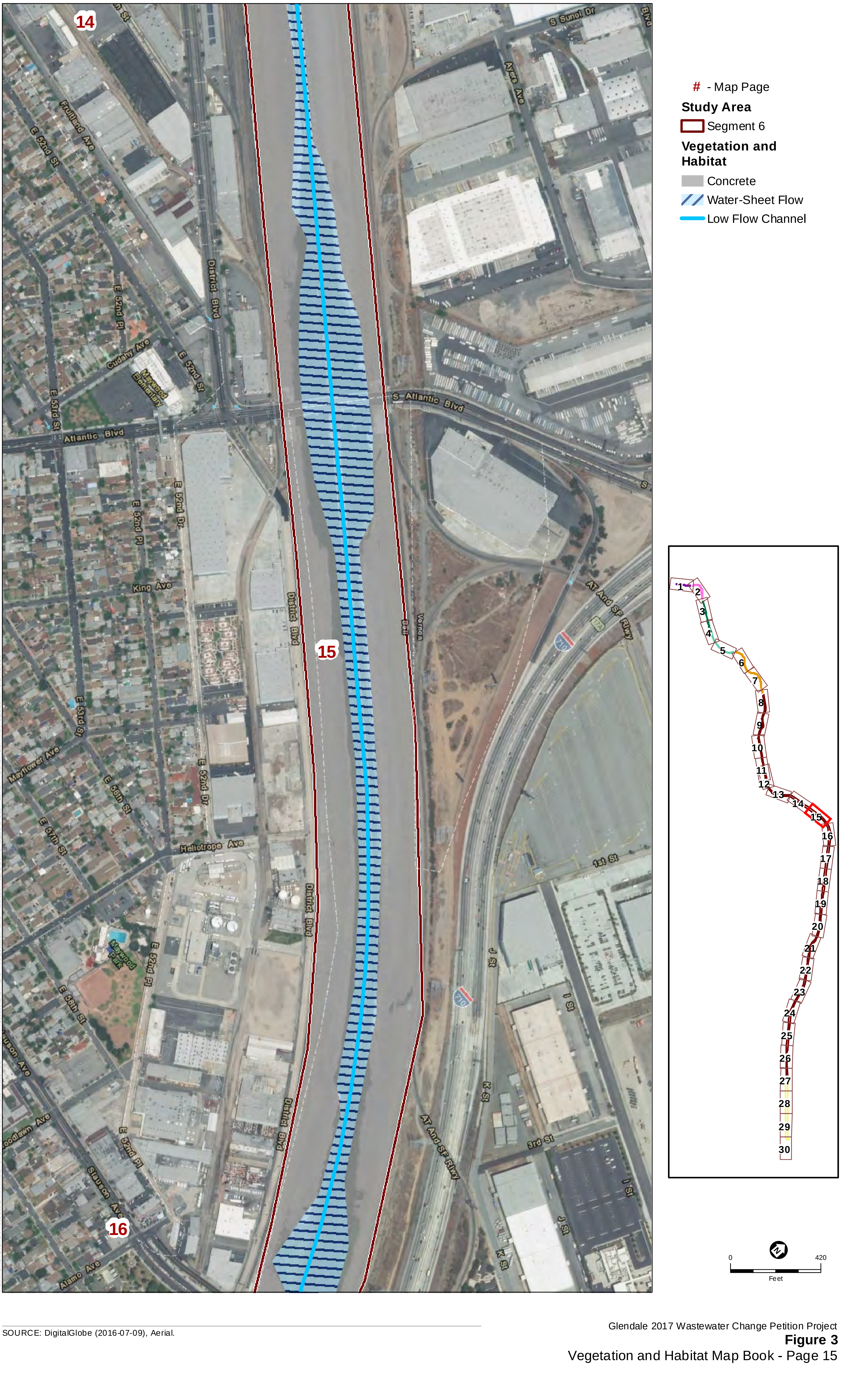


SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 14

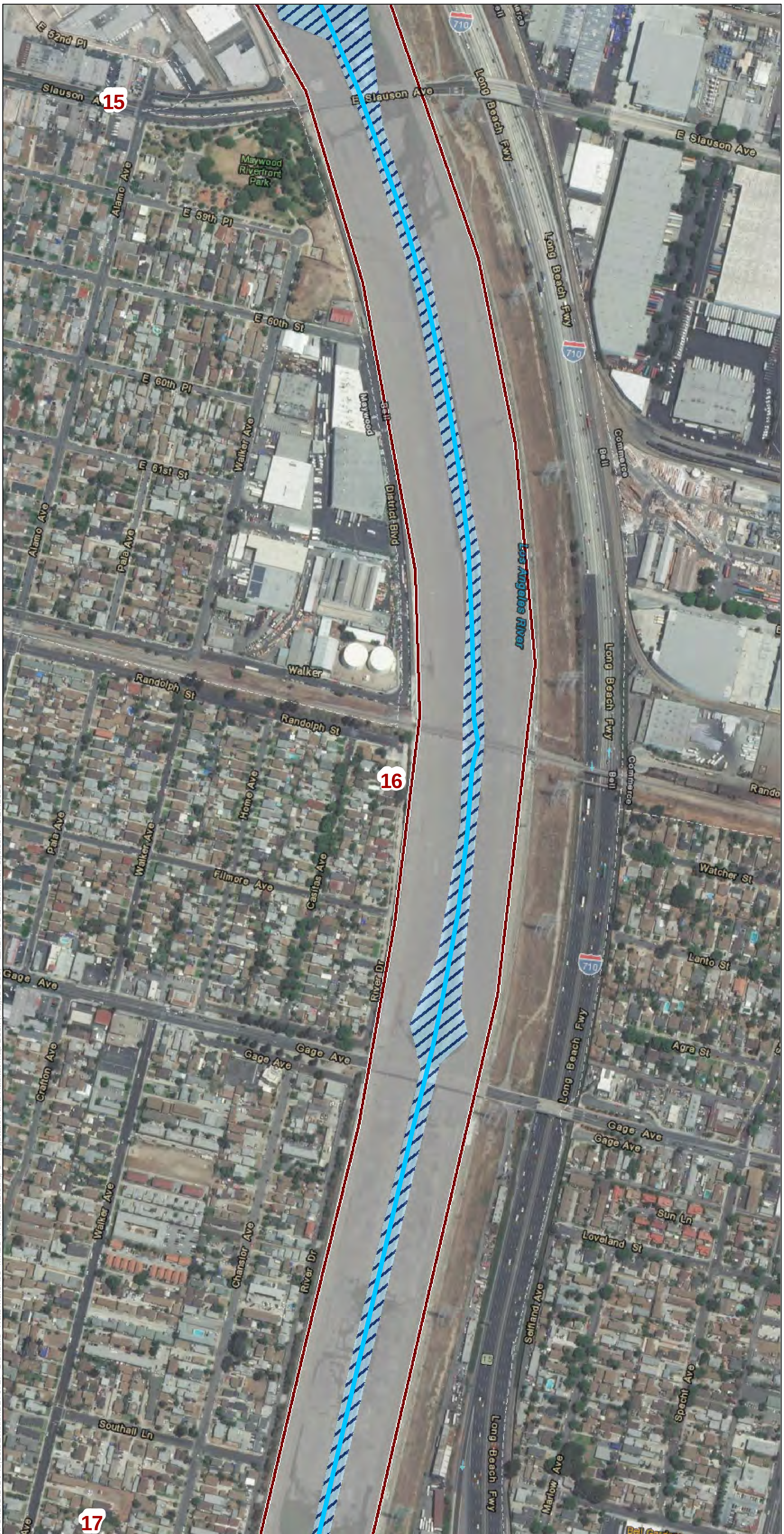


SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 15



- Map Page

Study Area

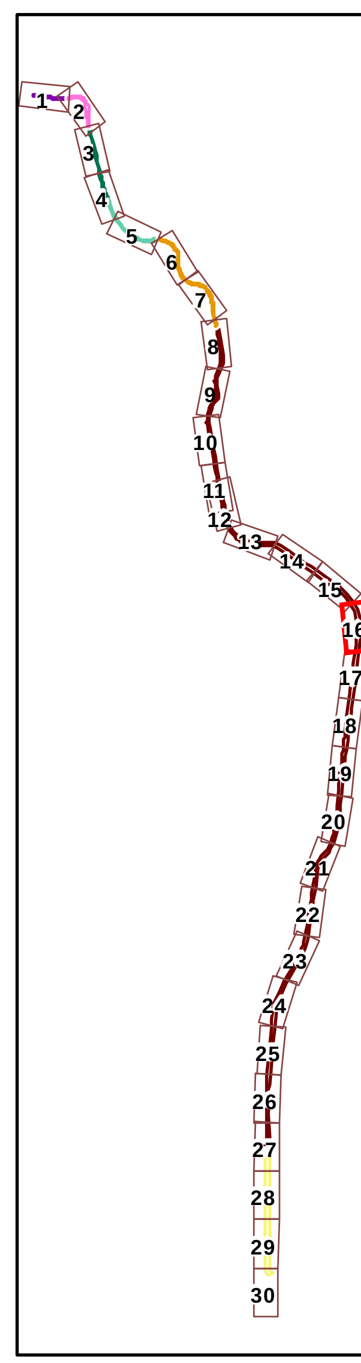
Segment 6

Vegetation and Habitat

Concrete

Water-Sheet Flow

Low Flow Channel



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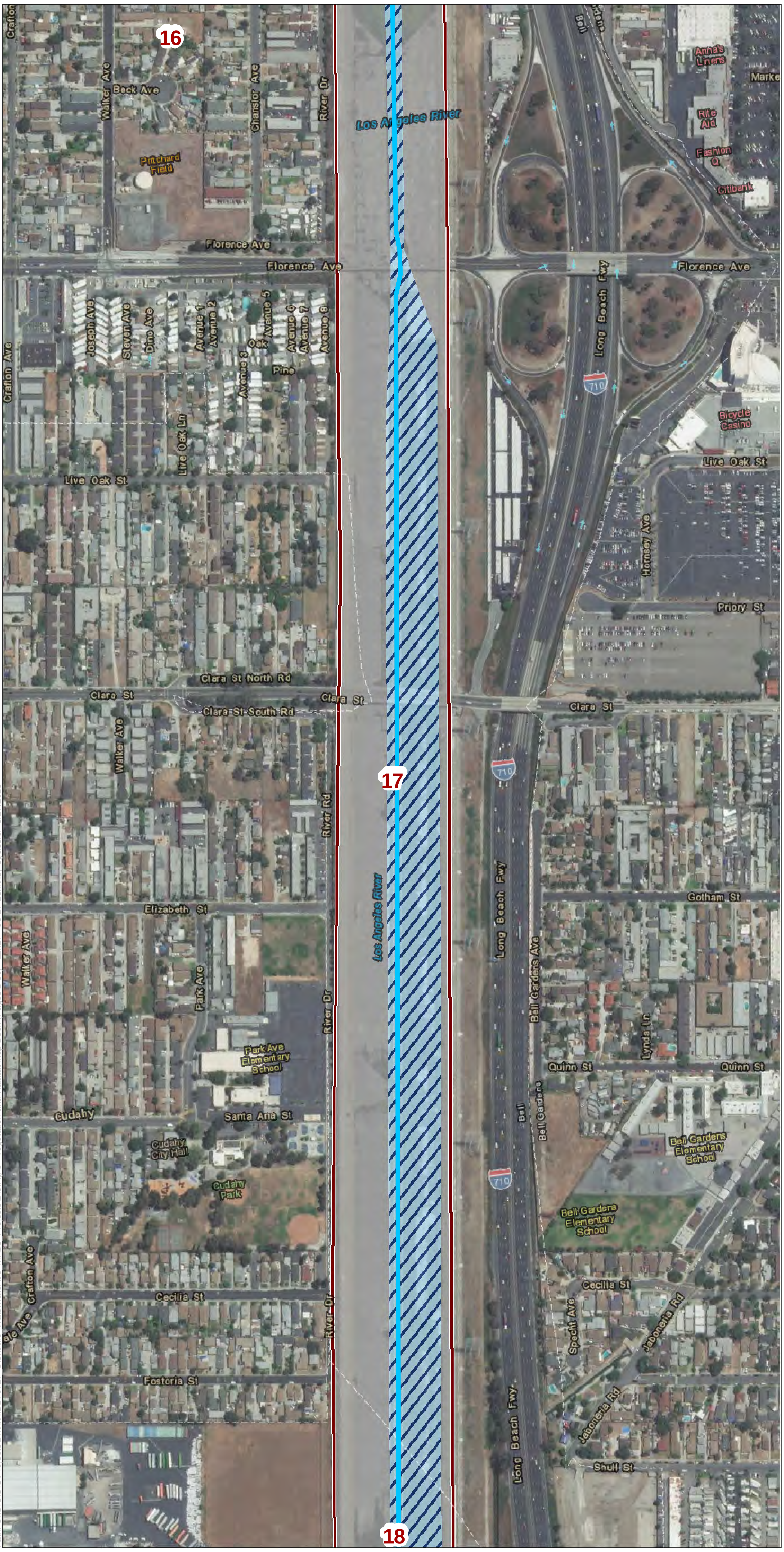
SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 16



- Map Page

Study Area

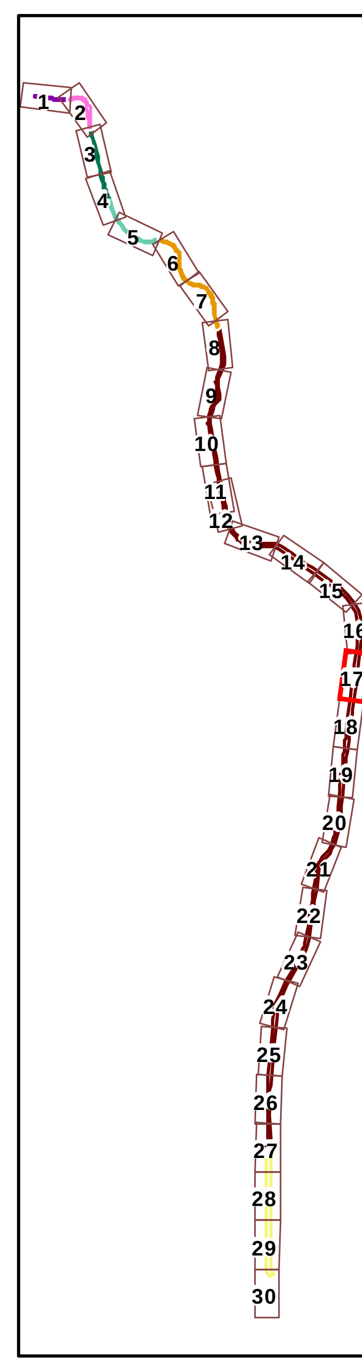
Segment 6

Vegetation and Habitat

Concrete

Water-Sheet Flow

Low Flow Channel



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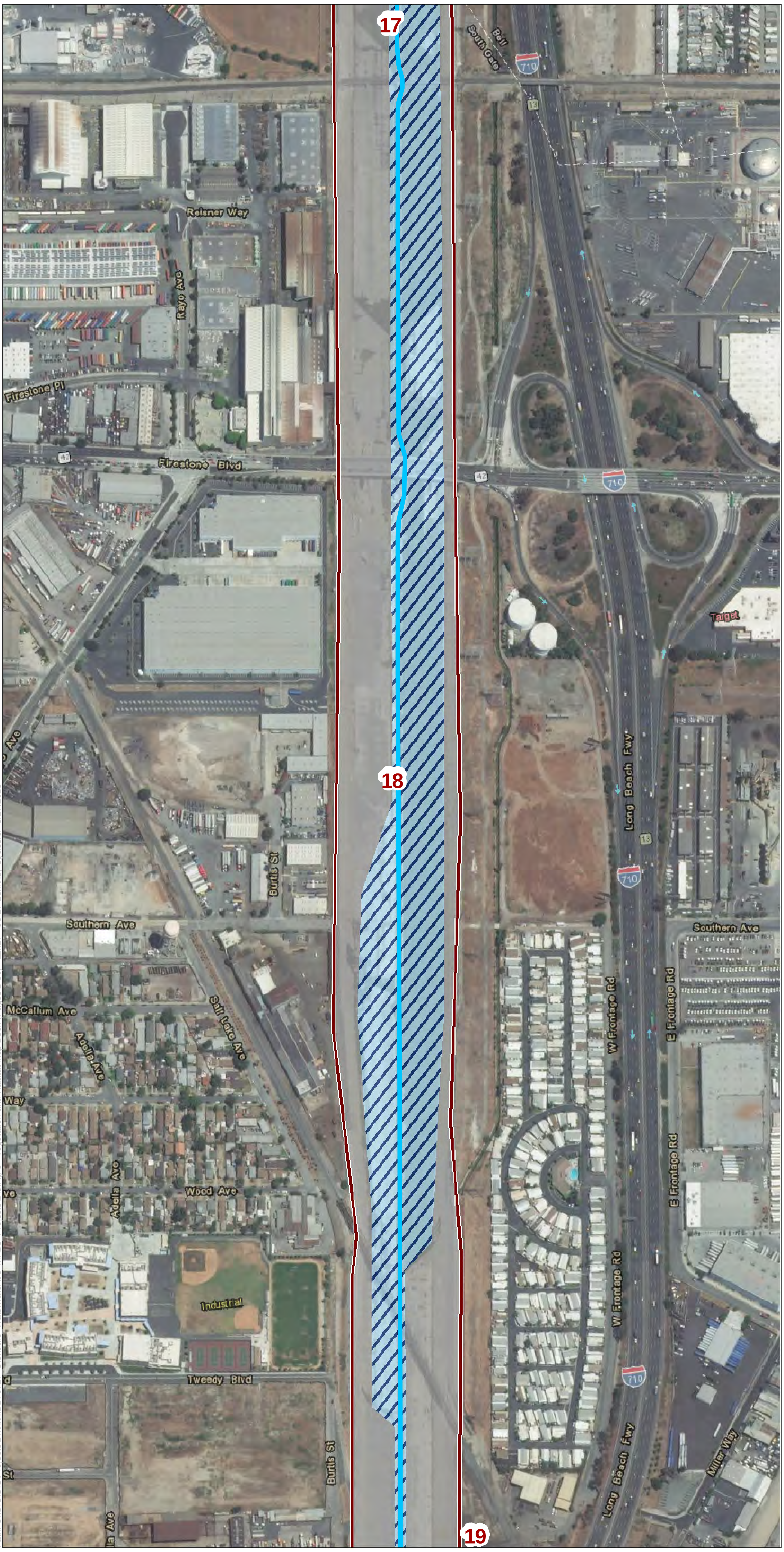
SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 17



- Map Page

Study Area

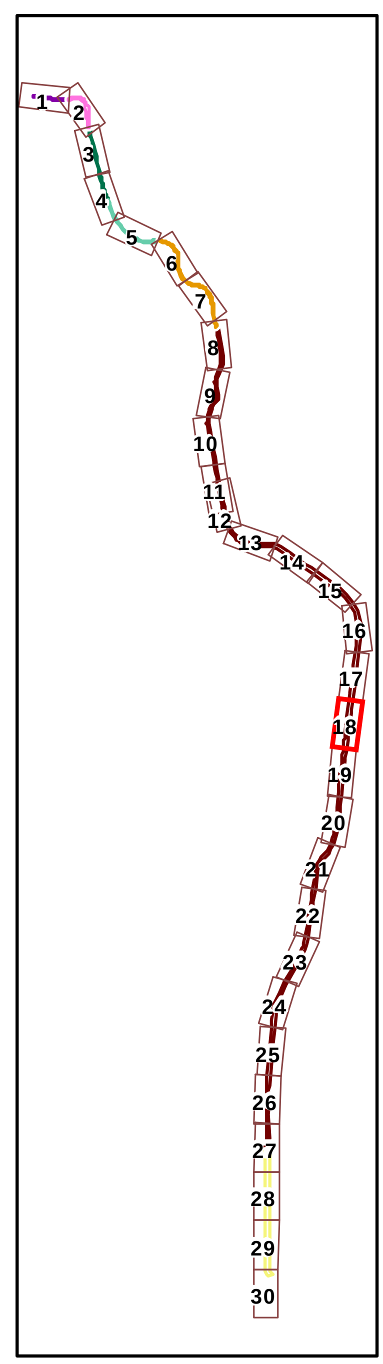
Segment 6

Vegetation and Habitat

Concrete

Water-Sheet Flow

Low Flow Channel



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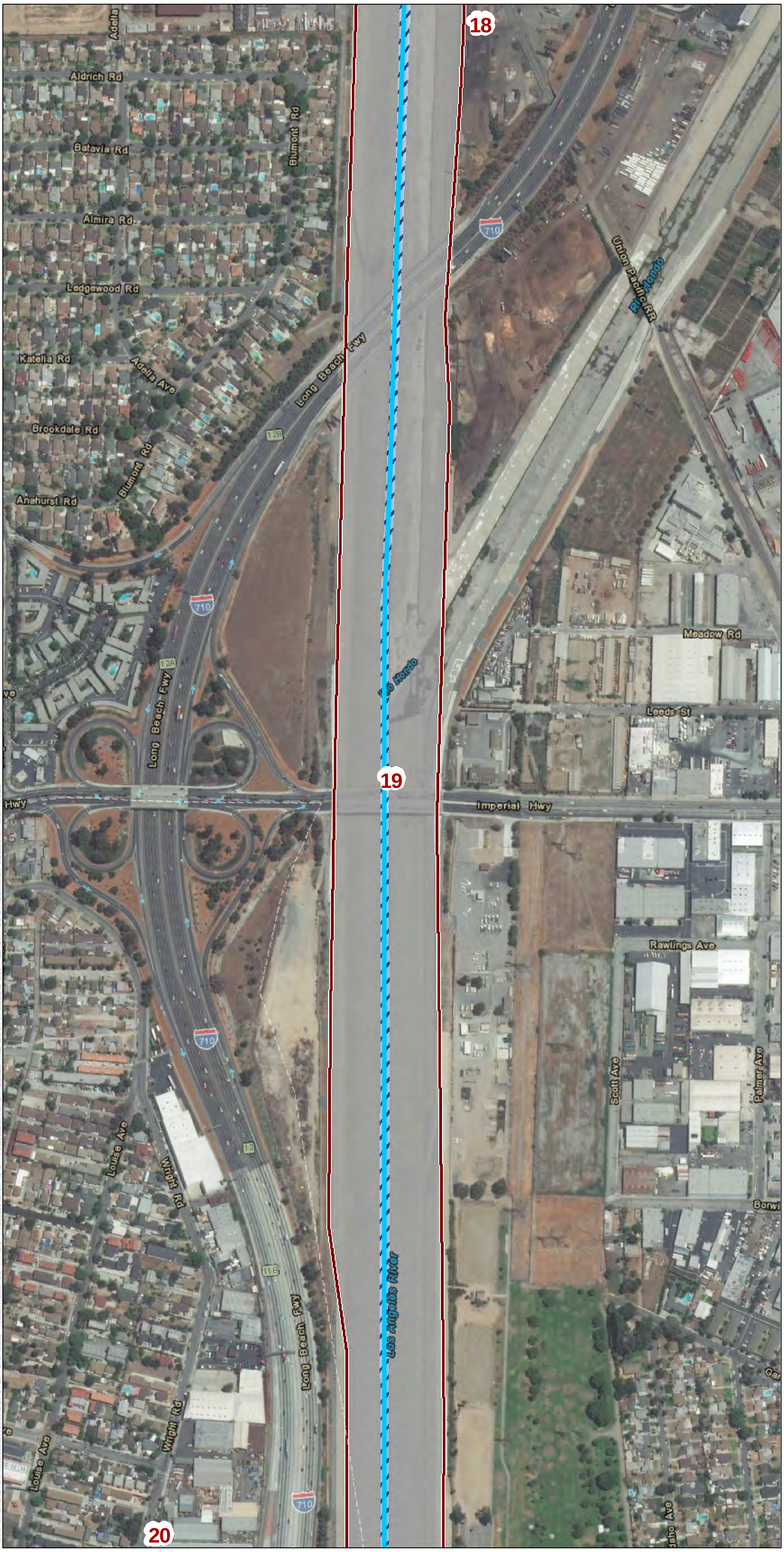
SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 18



- Map Page

Study Area

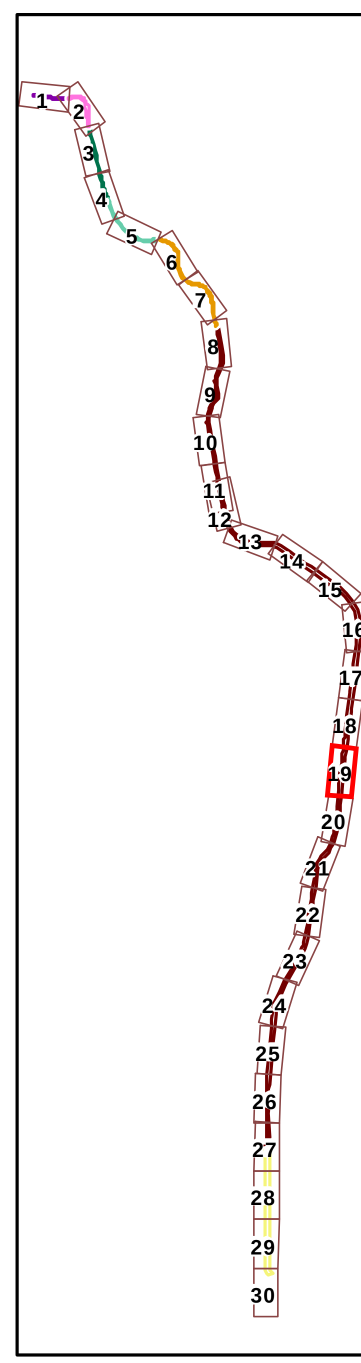
Segment 6

Vegetation and Habitat

Concrete

Water-Sheet Flow

Low Flow Channel



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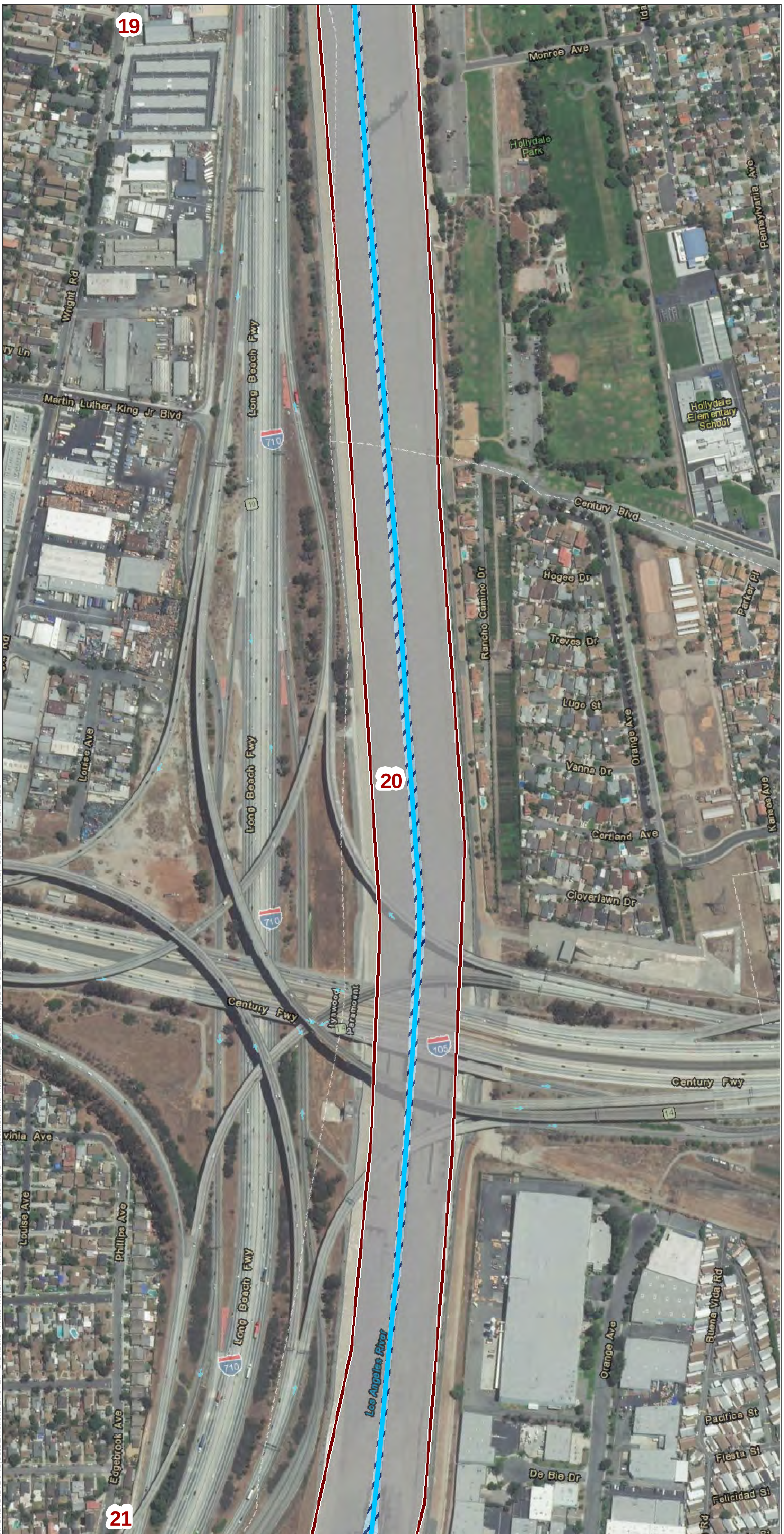
Path: U:\GIS\GIS\Projects\17xxxx\D170727_Glendale_Wastewater\03_MXDs_Projects\Bio\Fig 3 - Vegetation and Habitat Map Book (Pages 1-30) - 11x17 - 03-27-18.mxd, sgeissler 3/27/2018

SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 19



- Map Page

Study Area

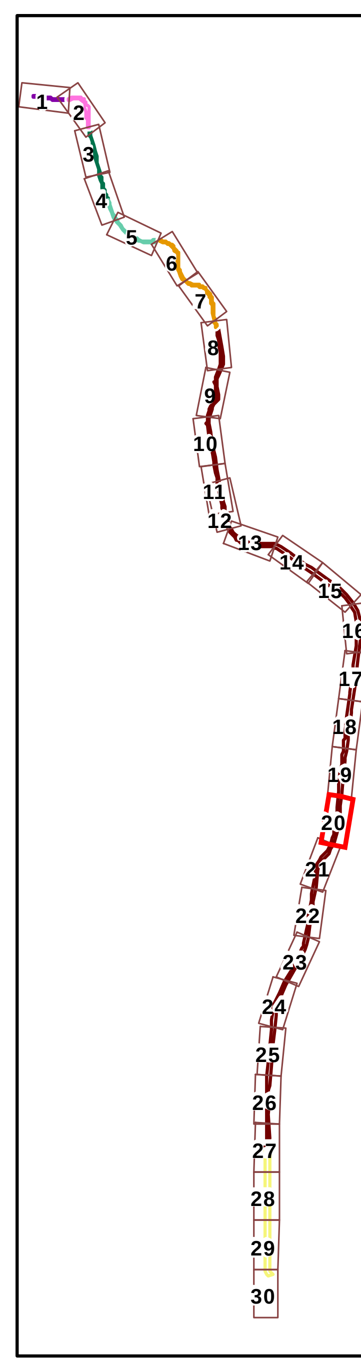
Segment 6

Vegetation and Habitat

Concrete

Water-Sheet Flow

Low Flow Channel



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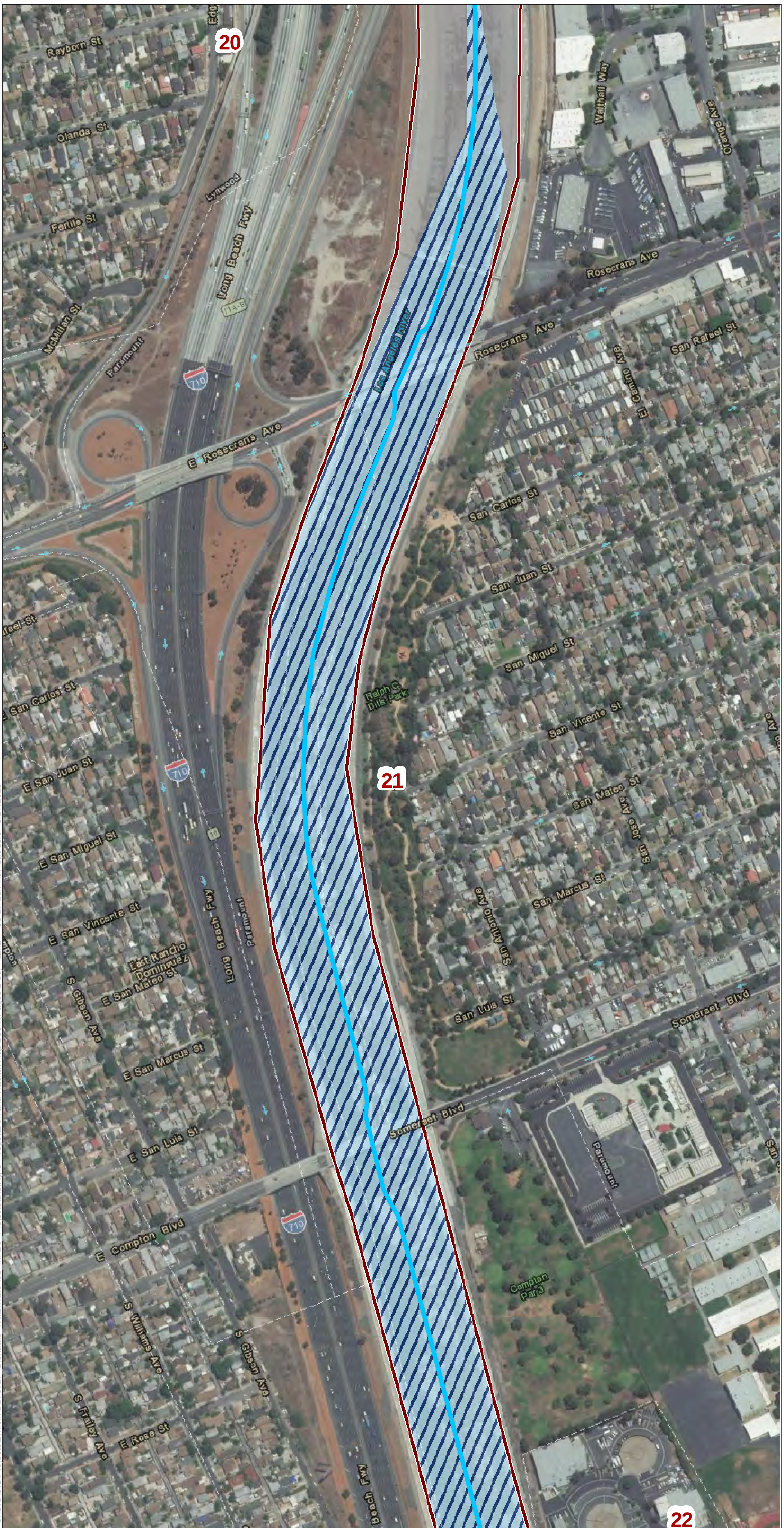
SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 20



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Study Area

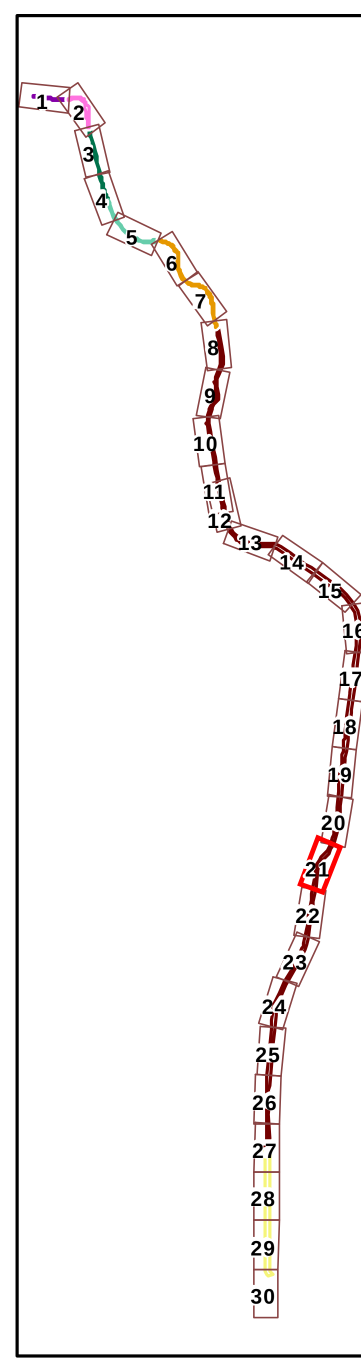
Segment 6

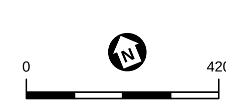
Vegetation and Habitat

Concrete

Water-Sheet Flow

Low Flow Channel





SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 21

- Map Page

Study Area

Segment 6

Vegetation and Habitat

Water-Sheet Flow

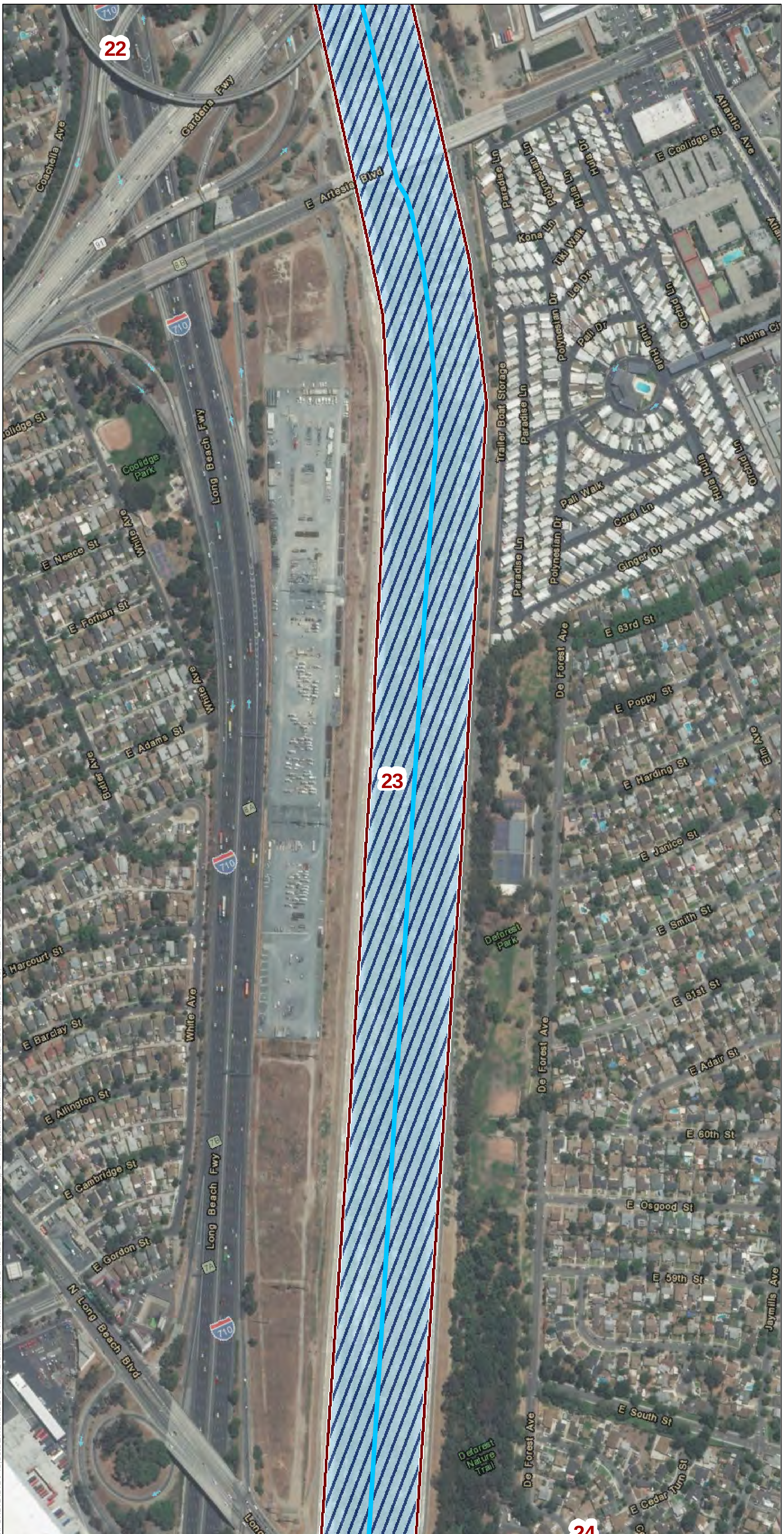
Low Flow Channel

SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 22

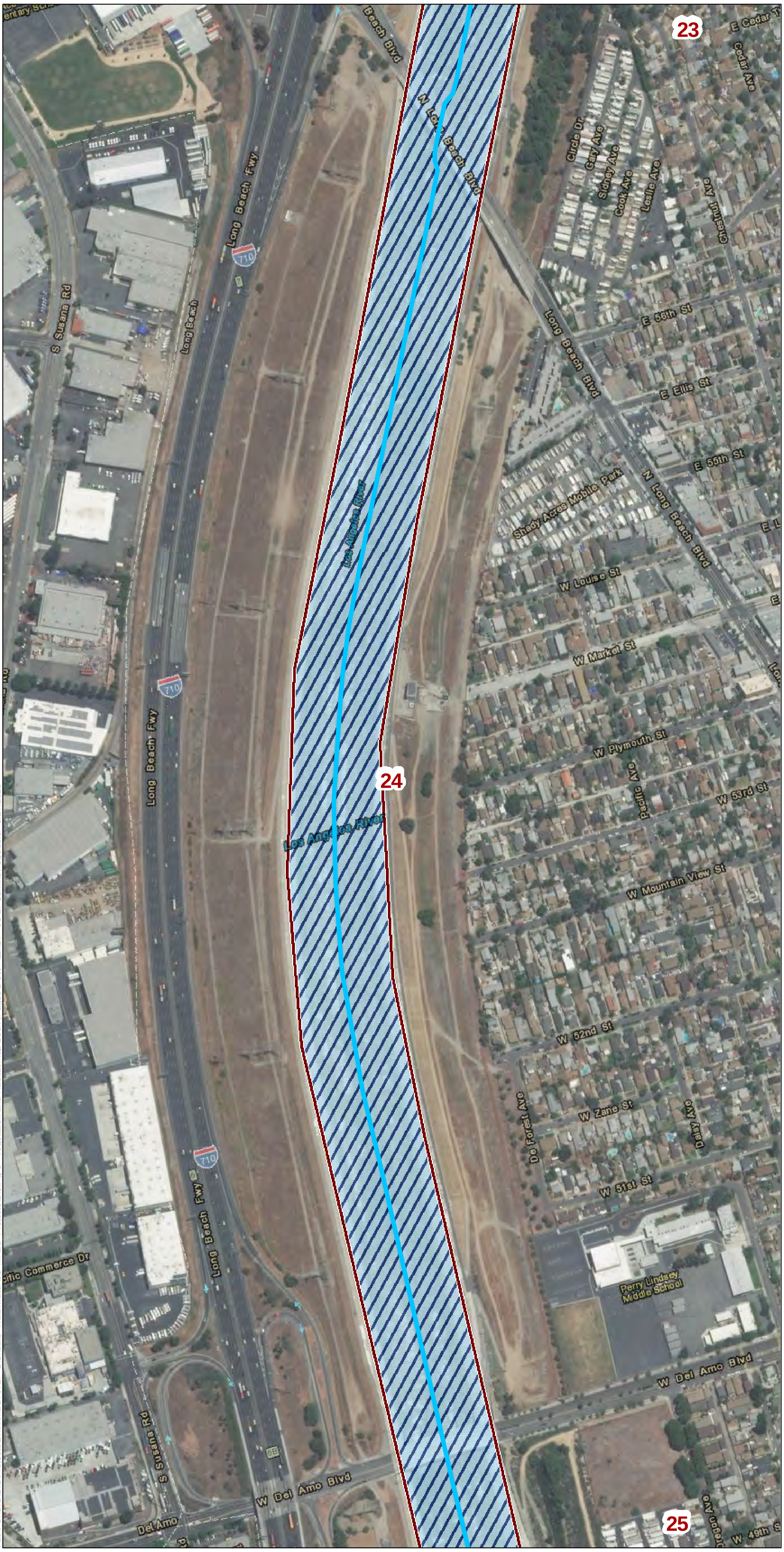


SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 23



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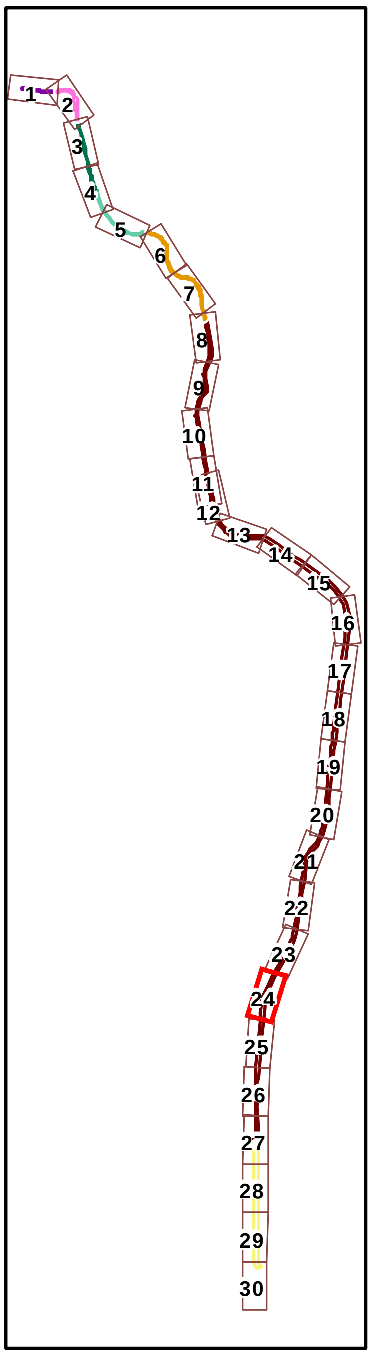
Study Area

Segment 6

Vegetation and Habitat

Water-Sheet Flow

Low Flow Channel



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SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 24

- Map Page

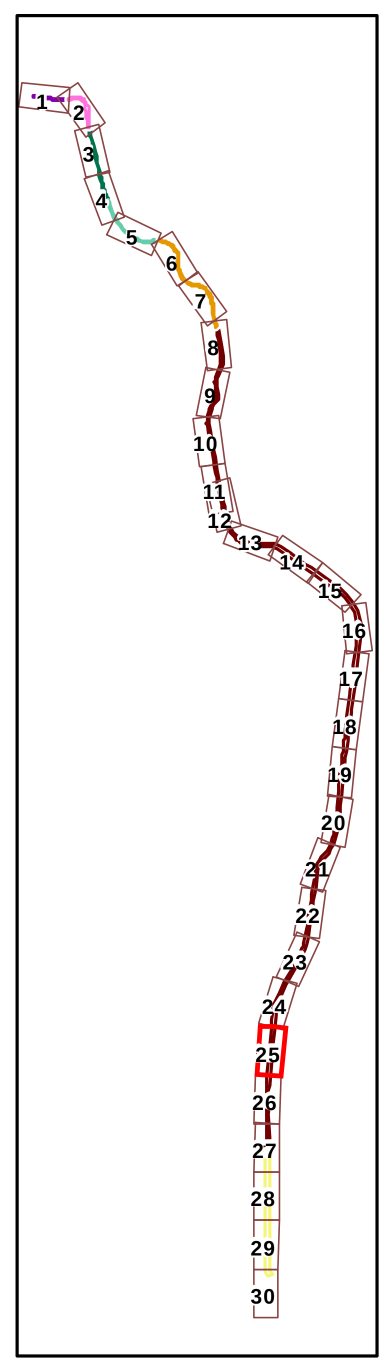
Study Area

Segment 6

Vegetation and Habitat

Water-Sheet Flow

Low Flow Channel



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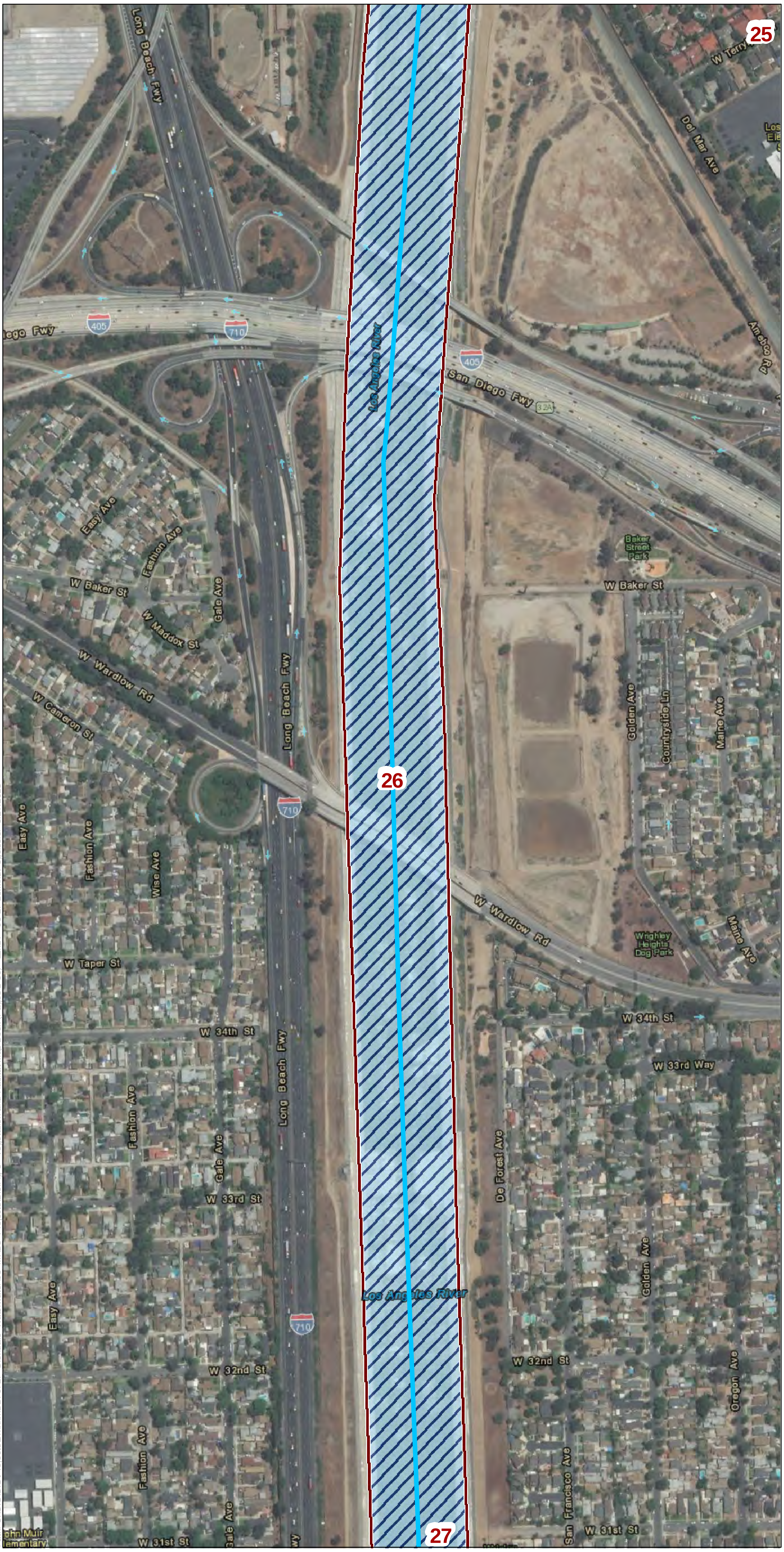
SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 25



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Study Area

Segment 6

Vegetation and Habitat

Water-Sheet Flow

Low Flow Channel

0 420

Feet

SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 26

SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 27

\# - Map Page

Study Area

Segment 7

Vegetation and Habitat

Sandbar

Water

N

0 420

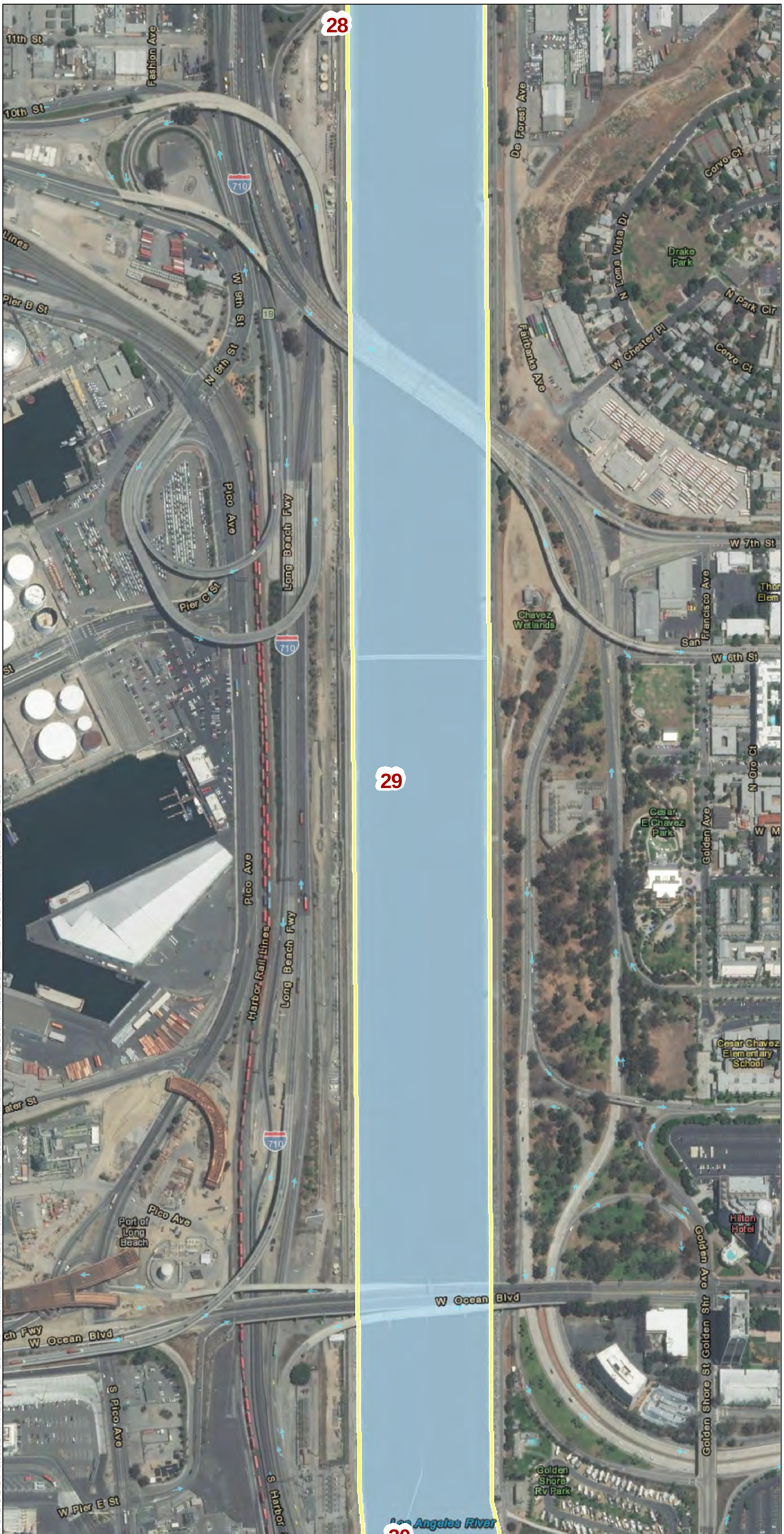
Feet

SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 28



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Study Area

Segment 7

Vegetation and Habitat

Water

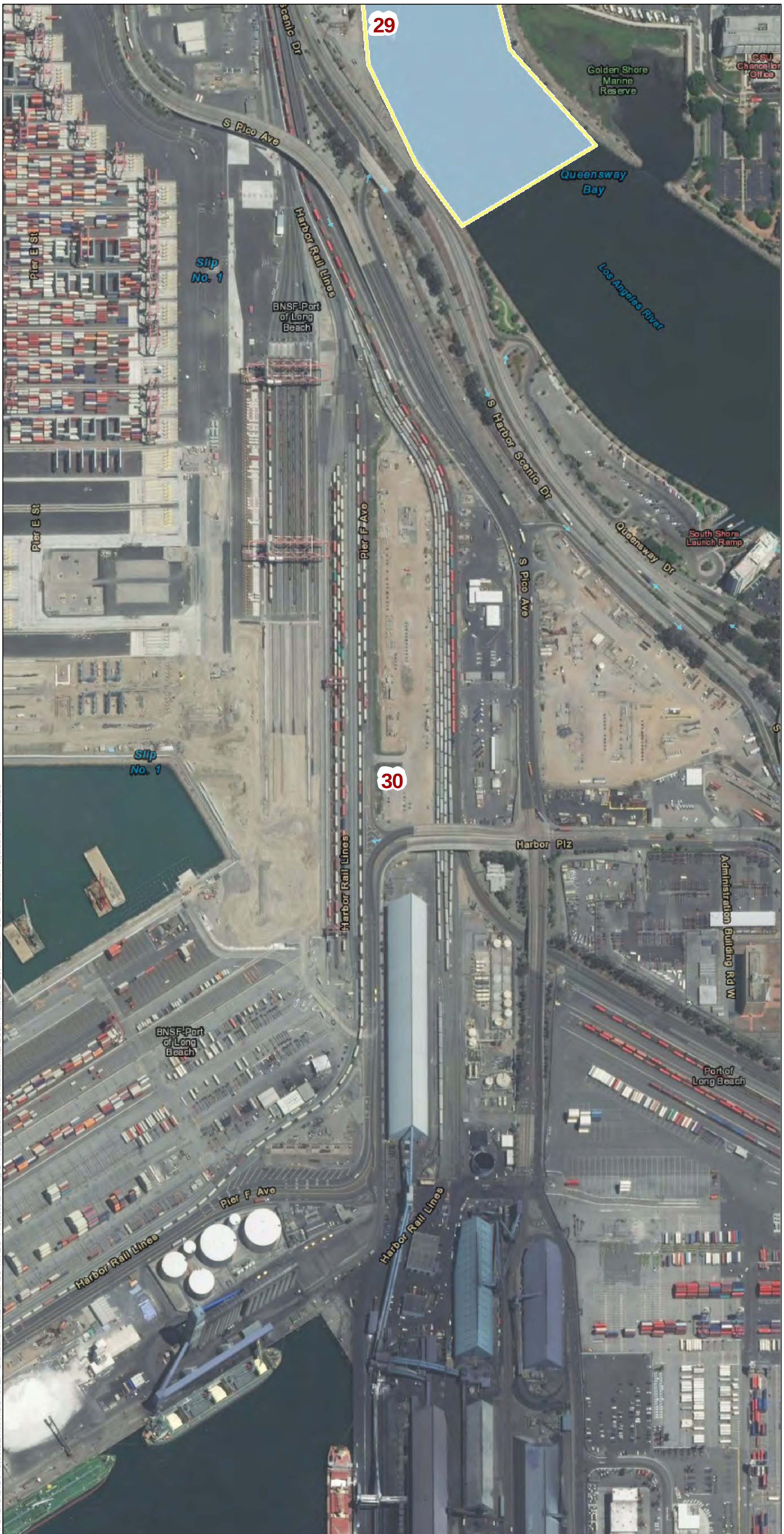
N
0 420
Feet

SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 29



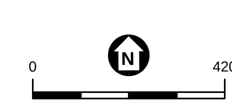
- Map Page

Study Area

Segment 7

Vegetation and Habitat

Water



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SOURCE: DigitalGlobe (2016-07-09), Aerial.

Glendale 2017 Wastewater Change Petition Project

Figure 3

Vegetation and Habitat Map Book - Page 30

TABLE 2
SURVEY AREA SEGMENTS

Segment #	Length (linear feet)	Area (acres)	Location	Substrate
Segment 3	9,298	37	Begins near the southern end of the Autry Museum of the American West and ends at Los Feliz Blvd. bridge	Soft bottom channel, rock and cobble substrate within trapezoidal concrete slopes
Segment 4	8,891	38	Between Los Feliz Blvd. bridge and State Highway 2 bridge	Soft bottom channel, rock and cobble substrate within trapezoidal concrete slopes
Segment 5	13,885	191	Between State Highway 2 and I-5	Soft bottom channel, rock and cobble substrate within trapezoidal concrete slopes
Segment 6	127,208	1,033	Between I-5 and the Willow Street bridge; the River generally follows I-5, and then turns south along I-710 in southeast downtown Los Angeles, ending in Long Beach	Concrete bottom channel, both box and trapezoidal sloped edges.
Segment 7			Between Willow Street Bridge and the Pacific Ocean	Soft-bottom channel, rock and silt substrate with boulder rip-rap reinforced sides.
Total	159,282	1,299	--	--

Methodology

Literature Review

A literature review was conducted to gather information on the biological resources known or likely to occur in the City of Glendale and the River's ecosystem. Literature pertinent to the River is abundant because biological resources within Segments 3-5 that are soft-bottom have been widely studied due to the potential for restoration and Segment 7 has been studied because this Segment is part of the Los Angeles River Estuary (Estuary). Much less information was available on Segment 6 (completely concrete lined) and the proposed pipeline alignments due to the lack of natural areas. The literature that was reviewed included the following:

- United States Army Corps of Engineers (USACE). 2013. *Los Angeles River Ecosystem Restoration Feasibility Study Draft – Appendix G Habitat Evaluation (CHAP);*
- Friends of the Los Angeles River (FoLAR). 2008. *State of the River 2 – The Fish Study*;
- Friends of the Los Angeles River (FoLAR). 2016. *State of the River 3 – The Long Beach Fish Study*;
- Cooper Ecological Monitoring, Inc. (Cooper). 2008. *Griffith Park Wildlife Management Plan Draft*;
- California Department of Fish and Wildlife (CDFW). 2017. California Natural Diversity Database (CNDDB) Geographic Information System (GIS) Spatial Data for Los Angeles River. Accessed December 13, 2017;
- United States Fish and Wildlife Service (USFWS). 2017a. Information for Planning and Conservation (IPac) Environmental Conservation Online System (ECOS). Accessed December 13, 2017;
- USFWS. 2017b. Endangered Species Act (ESA), Listed Species Report for Los Angeles County;

- FoLAR. 2007. *Images of America – Los Angeles River*.
- eBird online bird survey database. Hotspots and species data along the Los Angeles River. Accessed: December 20, 2017; and
- US Environmental Protection Agency (EPA). 2012. *Long Beach City Beaches and Los Angeles River Estuary Total Maximum Daily Loads for Indicator Bacteria*

Field Survey

The December 15 and 16, 2017 field survey included the proposed pipeline right-of-ways and surrounding 50-foot area, the three proposed pump station locations, and Segments 3-5 of the River, where vegetation occurs. Field survey in Segments 6 and 7 were conducted February 2018 although these areas are almost entirely concrete-lined and devoid of vegetation. The generally uniform condition of the Segment 6 made habitat assessment by desktop analysis possible to supplement the field survey. The proposed pipeline alignments were surveyed on December 15, 2017 and Segments 3-5 were surveyed on December 16. During the survey, the biologist characterized and mapped vegetation and habitats, surveyed for wildlife and plants, and assessed the quality of habitats within the proposed pipeline alignments and Segments 3-5 of the Study Area.

Vegetation and Habitat Mapping

The proposed pipeline alignments and pump stations will be sited largely in urbanized areas, but areas of natural vegetation were the focus of the vegetation and habitat mapping. Vegetation communities were characterized in the field following *A Manual of California Vegetation, 2nd Ed.* (Sawyer et al. 2009). The limited vegetation within Segments 6 and 7 of the River was mapped digitally by delineating the boundaries on aerial imagery using GIS software.

Vegetation communities, habitats and existing conditions in Segments 3-5 of the River were mapped by ESA in December 2016 (ESA 2017) and will be used as a baseline for this report. The December 2017 field survey described above was conducted to confirm that conditions within Segments 3-5 of the River were the same as observed in December 2016.

Habitat Assessment

The quality of habitat for native wildlife was determined based on the abundance, health, and vigor of native plant communities; abundance and diversity of invasive plant species; level of disturbance from urbanization, homeless encampments, trash, and debris; and important habitat features, such as the presence of sand bars unobstructed flowing water, native vegetation, evidence of bird nesting (i.e., predated nests), suitable perch sites for birds of prey, etc.

Environmental Setting

Proposed Pipeline and Pump Stations

The proposed pipelines and pump stations are within urbanized areas of the City. The proposed pipelines would be constructed within existing roadways except for approximately 900 feet of the Camino San Rafael Homes pipeline that would go through landscaping and park areas (described in detail below). Areas surrounding the roadways are entirely developed with residential, commercial, and industrial land uses. The pump stations are placed at road edges in heavily urbanized areas of the City.

Los Angeles River

The River was originally an alluvial river that ran freely across a flood plain with ephemeral flows that would rarely flow to the sea. The River is now nearly 90 percent channelized and supports perennial flows. The River is historically prone to flash floods, and tremendous flood damage to the region's industry and housing occurred in 1815, 1825, 1914, and twice more in the 1930s, which led to the channelization of the river that was completed in 1960 in an effort to limit damage to bridges and adjacent property during large flood events. All but 5.5 miles of the River has been channelized for flood control. The River was dry for up to nine months of the year until the 1950s after which industrial and residential discharges provided new sources for year-round flows. The Tillman Water Reclamation Plant (Tillman Plant) began operation in 1985 and today discharges up to 23 million gallons per day of treated wastewater into the River.

Segments 3-5 of the River are commonly referred to as the "Glendale Narrows," and support a diverse natural community despite the extensive alterations to native conditions from the engineering of the River Channel. Recreation is very common along the banks of the River, particularly the section adjacent to Griffith Park and Elysian Park where a bike path is present. A substantial amount of trash and foreign debris occurs in this section of the River due to the large homeless population. Invasive plant species occur in high densities throughout this section of the River, further degrading native habitat quality.

Segment 6 of the Study Area travels through downtown, south Los Angeles, and ends at the Willow Street bridge in Long Beach. This segment is entirely devoid of vegetation and completely surrounded by development,

Segment 7 of the Study Area consists of brackish water and is part of the Estuary. The Estuary receives almost all of its flow from a combination of freshwater from the River and saltwater from the San Pedro Bay. This segment is almost entirely inundated with water except for portions of rocky sandbars formed by silt and sediment accumulation on rip-rap that occurs south of Willow Street. Land use in this area is largely residential and commercial, except for the Golden Shore Marine Biological Reserve, which is located outside the Study Area along the eastern bank of the Estuary near the southern endpoint of Segment 7. The reserve was established as mitigation for impacts to salt-water lagoon from nearby development.

Vegetation Communities and Habitats

Proposed Pipelines

The proposed pipeline alignments are within existing roadways and are entirely paved except for an 800-foot section of the Camino San Rafael Homes Project pipeline between Chevy Oaks Drive and Calle Amable that would be constructed through irrigated landscaping (see **Photo 1** below), and an additional 100 feet of proposed pipeline between Calle Amable and Camino San Rafael that would be constructed through a local neighborhood park (see **Photo 2** below). The paved sections have residential landscaping and typical native and non-native urban street trees at the edges. The 800-foot section of proposed pipe would be constructed largely on a steep slope that is dominated by a dense mat of irrigated olive shrubs (*Olea europaea*) interspersed with the occasional Peruvian pepper tree (*Schinus molle*) and eucalyptus (*Eucalyptus globulus*). The topography flattens near Calle Amable where two western sycamore (*Platanus racemosa*) trees are located approximately 40 feet from Calle Amable. The 100-foot section of proposed pipe would be constructed through a park with a lawn surrounded by mature trees, including eight western sycamores, Mexican fan palm (*Washingtonia robusta*), Peruvian pepper tree, and eucalyptus trees, and landscaped shrub hedges near Camino San Rafael.

Pump Stations

Photo 1: Depicts the landscaping between Chevy Oaks Drive and Calle Amable where the Camino San Rafael Homes pipeline is proposed to be constructed.

Photo 2: Depicts the park between Calle Amable and Camino San Rafael where the Camino San Rafael Homes pipeline is proposed to be constructed.

The three pump stations are proposed along road edges, in areas that are heavily traveled and disturbed by urbanization. The location of each station is shown above in Figure 2.

- **Pump Station #1** occurs on the road edge at the bottom of a slope adjacent to apartment complexes on Chevy Oaks Drive (see **Photo 3** below). The area is dominated by landscaping plants such as fountain grass (*Pennisetum setaceum*), lavender (*Lavandula* sp.), bird of paradise (*Strelitzia reginae*), and many other non-native landscaping species. There are two mature coast live oak (*Quercus agrifolia*) trees in this proposed pump station location. A man-made drainage lined with stones directs surface water into a culvert that goes under Chevy Oaks Drive and eventually connects to the Pacific Ocean.

- **Pump Station #2** is proposed on the edge of Camino San Rafael, south of the intersection with Calle Del Sol, within city landscaping dominated by oleander (*Nerium oleander*), Mexican fan palms, and other landscaping shrubs (see **Photo 4** below).

- **Pump Station # 3** is proposed in an area that is largely bare ground on a slope between Chevy Chase Drive and Trammell Drive (see **Photo 5** below). A western sycamore occurs at the road edge where Chevy Chase Drive and Trammell Drive intersect.

Photo 3: Depicts the road edge where Pump Station #1 is proposed along Chevy Oaks Drive.

Photo 4: Depicts proposed location for Pump Station #2 within landscaping at the roads edge.

Photo 5: Depicts the proposed location for Pump Station #3 within the paved public right-of-way (left side of photo) at the intersection of Chevy Chase Drive and Trammell Drive.

Los Angeles River

Aquatic habitat was observed in Segments 3-7 of the River during the survey and desktop analysis, riparian vegetation was present in Segments 3, 4, and 5, and a sandbar habitat occurs in Segment 7. A description of the aquatic and sandbar habitats and riparian vegetation community within the Study Area is below. Photographs of Segments 3-5 of the River are presented in Appendix A.

Riparian Vegetation

Riparian vegetation includes areas of terrestrial vegetation that rely on a constant source of surface or ground water for survival. Roots of willow trees will grow as deep as the water table at which level lateral roots are spread. Willow trees adapt to seasonal drying with the dropping of leaves in late summer or fall. The only vegetation community found within Segments 3, 4, and 5 of the Survey Area is *Salix gooddingii* Woodland Alliance (black willow thickets [BWT]) (Sawyer et al. 2009), which is a common riparian vegetation community because of the soft-bottom and freshwater conditions within these segments. BWT is a riparian woodland community dominated by a tree canopy of black willow (*Salix gooddingii*), along with white alder (*Alnus rhombifolia*), Fremont's cottonwood (*Populus fremontii*), and other shrubby native willow species (*Salix* sp.).

Other lower density species that have been documented within this community include black elderberry (*Sambucus nigra*), California fan palm (*Washingtonia filifera*), coyote brush (*Baccharis pilularis*), and mulefat (*B. salicifolia*); however, only black willow was present throughout the BWT in the Study Area. In the canopy of the BWT in Segments 3, 4, and 5 the occasional western sycamore (*Platanus racemosa*) and a variety of ornamental and invasive trees also occur, such as Chinese tallow (*Triadica sebifera*), date palm (*Phoenix* spp.), and mulberry (*Morus* spp.)

This native riparian community has been greatly degraded and disturbed by homeless encampments, trash, invasive plant species, and periodic vegetation management activities required for channel flows, which was occurring at the time of the field survey. Native species were almost entirely absent from the understory of the BWT aside from the occasional mulefat and sandbar willow (*Salix exigua*) in the southern half of Section 5, and the occasional patch of cattails (*Typha latifolia*) that occurred at the edges of BWT in all segments of the Study Area. Based on the visual assessment during the survey, approximately 60-90 percent of relative vegetation cover is dominated by exotic species in areas where vegetation management had not occurred in the past year. However, the invasive understory was recently removed from the BWT in Segment 1 and portions of Segments 4 and 5 during invasive removal activities that were occurring during the field survey. In managed areas there remained only 10-15 percent invasive cover, 10-25 percent mature black willow trees, and 60-80 percent bare ground. Despite the dozens of exotic plant species known to occur in the River (USACE 2013), in the Study Area, approximately 85 percent of exotic plant cover is giant reed (*Arundo donax*), 5 percent is castor bean (*Ricinus communis*), 5 percent is Mexican fan palm, and the remaining 5 percent is a variety of other exotic species.

Aquatic Habitat

Aquatic habitat includes open water, areas of emergent vegetation and emergent boulders, and the interchange between water and terrestrial communities. Historically, the seasonal hydrology and permeable characteristic of the southwest region create a dynamic ecosystem with and variable aquatic habitat, where the river course shifts with a highly variable flood regime through expansive floodplains (FoLAR 2008 and USACE 2013). Flood risk management, water supply projects, and other development have nearly eliminated such systems in the region through channelization, dam building, and urbanization. Development resulted in faster flood flows in a narrow channel, and the dynamic system has become one that is simplified by reduced flow options and magnified by higher flows over a smaller area. Ultimately the system has become a drainage channel designed to move bursts of high volumes of water out of the system quickly, rather than functioning as a dynamic and variable ecosystem. As a result, the River has lost much of its natural ecological value and its aquatic and semi-aquatic habitat as a result of development.

Aquatic habitat occurs in all segments of the Study Area the majority of which occurs as a narrow fast moving channel. In Segments 3, 4, 5, and 7 areas of ponded and slower moving water occur at the edges of the vegetation and bare substrate and boulders in unvegetated areas slow water to create variation and breaks in the flow. In concrete line Segments 2 and 6 a thin sheet of water occurs surrounding the fast moving, narrow channel. Segment 7 is a brackish aquatic habitat that receives some flow from the River and some flows from the Pacific Ocean that enter from the opposite direction.

Sandbar Habitat

Sandbar habitat includes terrestrial areas of rock substrate that is partially inundated with brackish water for parts of the year. The water depth changes frequently based on the tide and the amount of flows from the River, and portions of sandbar occur as terrestrial habitat where vegetation may establish. Segment 7 of the Study Area has approximately 40 acres of sandbar habitat between Willow Street and Pacific Coast Highway bridges. This habitat was not found in other segments of the River. The sandbar occurs largely at the edges of the soft-bottom river in the northern edge of the transition zone between the freshwater in the River and the saltwater in the ocean, and the acreage of habitat will vary greatly depending on the amount of flow in the River and the tide. The substrate in this area includes exposed rocky rip-rap and boulders where silt and sediment has collected to form rocky sandbars that are permanently moist and frequently inundated with water. When the water is low areas that are inundated at other parts of the year consist of bare boulder piles, and vegetation occurs in areas less frequently inundated with water, typically along the edges of the soft bottom of this Segment. A field survey was not conducted in this area, but a review of photographs available in Google Street View (Google 2016) and from the FoLAR website (FoLAR 2016), indicates the vegetation is dominated by herbaceous weedy species. One cluster of willows (likely black willow) occurs in the very northern portion of the segment.

Wildlife

Pipelines and Pump Stations

Wildlife in the proposed pipeline alignments and pump stations and surrounding areas is limited to species that thrive in urban areas, such as California ground squirrel (*Otospermophilus beechyi*), coyote (*Canis latrans*), and common songbirds and raptors (i.e. house finch [*Haemorhous mexicanus*], American crow [*Corvus brachyrhynchos*], and red-tailed hawk [*Buteo jamaicensis*]).

Los Angeles River

The Study Area hosts a diversity of wildlife species, although many are nonnative. According to the *Los Angeles River Ecosystem Restoration Study* (USACE 2013), there are 181 wildlife species that have the potential to occur within Segments 1-5 of the Study Area. The list was developed using numerous data sources and habitat suitability assessments, and is considered by local agencies and conservation groups to be the most accurate list of potentially occurring wildlife within Segments 1-5 of the River. The wildlife that have been documented (presented in **Appendix B**) includes 7 fish species (one of which is native; the western mosquitofish [*Gambusia affinis*]), 4 amphibian species, 7 reptile species, 139 bird species, and 24 mammal species.

Wildlife in Segment 6 is limited to common waterfowl, shorebirds, and other aquatic or semi-aquatic species able to forage for algae and micro-invertebrates that are found in abundance in treated wastewater and urban runoff that forms a thin sheet in these concrete-lined reaches. Birding hotspots reported to eBird occur in each segment of the Study Area due to the species diversity and abundance, and the southern 7 miles of the Study Area (Segment 7 and portions of Segment 6 from south of the 105 Freeway) is recognized by the Audubon Society as an Important Bird Area because of the amount of shorebird migration and winter foraging in the shallow waters of the concrete lined segment that has been documented (Cooper 2004).

Although the concrete-lined reaches of the Los Angeles River are primarily unvegetated, some organisms are associated with the warm, nutrient-rich waters, such as algae and aquatic invertebrates, which provide forage habitat for shorebirds. These “algal mats” are primarily found in patches within approximately 16 miles of the River (about 50 percent of the Study Area) downstream from the LAGWRP discharge location (in Segment 6 from Willow Street upstream to Rosecrans Avenue). The algal mats found growing on the concrete channel within the Study Area do not support any of the special status bird species, are not classified as a special status habitat by any wildlife agency, and can survive periodic drying. The flashy nature of the River results in periodic channel floor drying causing temporary desiccation.

The brackish waters of Segment 7 support a similar aquatic and semi-aquatic wildlife community as Segments 1-5, largely of shorebirds and waterfowl, but can also support ocean fish species not found in other segments, such as northern anchovy (*Engraulis mordax*). The recreational freshwater fish found in other segments may have a more difficult time surviving in the brackish water of this segment and are likely found in less abundance or they are absent from this segment. This area is most notable for its habitat for shorebirds and waterfowl because the rip-rap lined edges and the rocky substrate provide exceptional foraging opportunities for these birds. Foraging raptors are attracted to this segment due to the high density of waterfowl and shorebirds that are their prey. Survey records in the River south of Willow Street indicate that 212 species of birds have been recorded to eBird in Segment 7, however, the majority of these are native species.

Special-Status Species

Special-status species are defined as those plants and animals that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies as under threat from human-associated actions. Some of these species receive specific protections that are defined by federal or state endangered species legislation. Others have been designated as special-status on the basis of adopted policies of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives. Wildlife and plants can be designated as special-status species in several ways:

- **Federal Endangered Species Act (ESA):** Species listed or proposed for listing as “threatened” or “endangered”, or as a “candidate” for possible future listing as threatened or endangered; “critical habitat” can be designated for listed species; USFWS currently oversees special-status listing for species in the Study Area;
- **California ESA**: Species listed or proposed for listing as “threatened” or “endangered”, or are a “candidate” for possible future listing as threatened or endangered;
- **California Environmental Quality Act (CEQA) Guidelines, Section 15380**: Species that meet the definitions of “rare” or “endangered”, as defined in Section 15380 of the CEQA Guidelines; and/or

- **California Department of Fish and Wildlife (CDFW)**: Species designated by CDFW as "species of special concern" and species on the watchlist for listing under the California ESA; and species identified as "fully protected" under the California Fish and Game Code; Sections 3511, 4700, and 5050.

Special-Status Plants

Special-status plants are not likely to occur in the Study Area due to the high level of habitat degradation that has occurred from urbanization and streambed alterations (i.e., cement-lined and accelerated flows), ground disturbance, extensive populations of exotic plant species that outcompete natives, homeless encampments, and trash. No special-status plants are anticipated to occur in the proposed pipeline alignments or pump stations due to a lack of native vegetation or habitats. No special status plant species were identified in the December 15 and 16, 2017 field survey of the proposed pipeline right-of-ways and the three proposed pump station locations.

CNDDB records that intersect with the River include four special-status plants: mesa horkelia (*Horkelia cuneata* var. *puberula*), Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*), prostrate vernal pool navarretia (*Navarretia prostrata*), and Greata's aster (*Symphyotrichum greatae*) (CNDDB 2017). Mesa horkelia and Greata's aster are both upland species and no suitable habitat for these species occurs in the Study Area. The CNDDB indicates one record of vernal pool navarretia collected in 1907 in Segment 6 when the River was a natural system; however, this species is considered to be extirpated due to development. One record of Coulter's goldfields reported in 1973 was collected in an overflow channel outside of Segment 7 between Long Beach Boulevard and Del Mar Avenue in Long Beach. However, Segment 7 is now largely comprised of invasive species and is of low quality for this species. It is for these reasons that special-status plant species do not have the potential to occur in the Study Area and will not be discussed further.

Special-Status Wildlife

The potential for special-status wildlife species to occur in the Study Area was determined through the field survey, which noted observations of special-status species and the extent and quality of supporting habitat, as well as published geographic range maps, and recent or past occurrences within the Study Area as report to the CNDDB and the other resources that were reviewed. The proposed pipeline alignments and pump stations lack native vegetation and habitats necessary for special-status wildlife to occur, and therefore, the assessment of special-status species will be limited to an assessment of special-status wildlife within the River. A summary of the listing status for each of these species, as well as their likelihood of occurrence in Segments 3-7 of the River is presented in **Table 3**. The "Potential for Occurrence" as described in Table 3 is defined as follows:

- **Unlikely:** The Study Area and/or immediate vicinity does not support suitable habitat for a particular species.
- **Low Potential:** The Study Area and/or immediate vicinity only provide limited habitat for a particular species. In addition, the known range for a particular species may be outside of the immediate project area.
- **Medium Potential:** The Study Area and/or immediate vicinity provide suitable habitat for a particular species.
- **High Potential:** The Study Area and/or immediate vicinity provide ideal habitat conditions for a particular species and/or known populations occur in the immediate area.
- **Present:** The species was observed on the site during a field survey conducted by ESA in December 2016.

TABLE 3
SPECIAL-STATUS WILDLIFE SPECIES DOCUMENTED WITHIN STUDY AREA

Species	Status: Federal/State	Preferred Habitat	Probability of Occurrence in Study Site
Invertebrates			
Crotch bumblebee (*Bombus crotchii*)	-/-	Overwinters along the Central and Southern California Coast, typically in large tree groves near the coast that provide shelter from the elements.	**Low:** One occurrence record for this species was recorded to the CNDDB in 1973 near the southern tip of Segment 7; however, the exact location is unknown. Although large trees occur in the BWT in the Study Area, the habitat is degraded by invasive plants, trash, and illegal encampments and is, therefore, of low quality for this species.
Fish			
Santa Ana sucker (*Catostomus santaanae*)	FT/SSC	South coast flowing waters. Prefers small to medium streams with higher gradients, clear water, and coarse substrates.	**Unlikely:** No occurrence records for this species occur in the Study Area, and the Study Area is outside the known range of this species. The species is believed to have been extirpated from the Study Area due to channelization and the damming of the River and its tributaries. In the Los Angeles River watershed, this species is confined to Big Tujunga Creek in the upper portions of the watershed between Hansen and Big Tujunga Dams, and to 2.2 miles of Haines Creek (a tributary of Big Tujunga Creek) (USFWS 2014)
Arroyo chub (*Gila orcuttii*)	-/SSC	South coast flowing streams. Adapted to hypoxic conditions and large temperature fluctuations.	**Unlikely:** No occurrence records for this species occur in the Study Area. Although the Study Area is within the native range of the species, Hansen and Tujunga dams block this species from entering the Los Angeles River.
Southern steelhead (*Oncorhynchus mykiss*)	FE/SE	An anadromous species, spends most of its adult life in the ocean, but spawns and rears in freshwater streams.	**Unlikely:** No occurrence records for southern steelhead occur in the Study Area. The non-anadromous form (rainbow trout – no status) is known to occur in the Los Angeles watershed above the Tujunga dam, but not in the Los Angeles River.
Santa Ana speckled dace (*Rhinichthys osculus* spp. *robustus)*	-/SSC	This species is found in a wide variety of aquatic habitats. Prefers clear, well oxygenated water, with movement due to a current or waves. Thrives in areas with deep cover or overhead protection from vegetation or woody debris. Predominantly occupy small streams of the second to third order where they feed and forage for aquatic insects.	**Low:** No occurrence records for this species occur in the Study Area. Santa Ana speckled dace is considered common within the Tujunga Wash (tributary to the Los Angeles River), but are less common below the Tujunga Dam. Surveys performed below the dam between 2002-2005 found several (in the 10s) speckled dace in Big Tujunga Creek below the dam, Tujunga Wash, and Haines Canyon. However, it is unlikely that the species occurs in the Study Area because Hansen dam cuts off the connectivity to the Los Angeles River, degradation of the habitat from channelization, pollutants, trash, and illegal encampments (CDFW 2010).
Reptiles			
two-striped garter snake (*Thamnophis hammondii*)	-/SSC	Marshes, meadows, sloughs, ponds, and slow-moving water courses.	**High:** Suitable habitat is found in the ponds, and in areas of slow-moving water and emergent vegetation along the edges of the BWT throughout Segments 3, 4, and 5. Segment 6 is not likely to support the species due to the lack of ponding and slow-moving water and the limited availability of prey, and because these segments are cement lined.

Species	Status: Federal/State	Preferred Habitat	Probability of Occurrence in Study Site
Birds			
Cooper's hawk (*Accipiter cooperii*)	-/WL	Habitat includes mature forest, open woodlands, wood edges, river groves. Typically nests in woodlands with tall trees and openings or edge habitat nearby. Increasingly found in cities where some tall trees exist.	**Present:** Cooper's hawk was observed during the field survey in Segments 4, and 5. Tall willows in the BWT provide suitable nesting and perching habitat for this species.
Sharp-shinned hawk (*Accipiter striatus*)	-/WL	Mixed or coniferous forests, open deciduous woodlands, thickets, edges. Usually nests in groves of coniferous trees in mixed woods, sometimes in dense deciduous trees. In winter found in any kind of forest or brushy area, but tends to avoid open country.	**High:** Sharp-shinned **hawk** has been recorded to eBird within all segments of the Study Area. This species is most commonly found in the Study Area during the winter, but is not likely to nest within the Study Area due to the low density of trees and degraded habitat.
Vaux's swift (*Chaetura vauxi*)	-/SSC	Open sky over forest, lakes, and rivers. Often feeds low over water. Nests and coniferous and mixed forest, mainly old-growth forest.	**High:** Vaux's swift has been recorded to eBird in each segment of the Study Area, but the species is uncommon in the area. The species is not likely to nest due to the lack of old-growth forest, and likely uses the Study Area for foraging and during migration.
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	FT/SE	Woodlands, thickets, orchards, streamside groves. In the west, mostly nests in streamside trees, including cottonwood-willow groves in arid country.	**Unlikely:** Two occurrence records for western yellow-billed cuckoo were recorded to the CNDDB in 1921 and 1923 in the southern end of Segment 7 when the River supported a larger and denser riparian habitat but this species is presumed to be extirpated due to the loss of habitat from development. BWT in the Study Area is highly degraded by invasive plants, trash, and homeless camps, and therefore the habitat is not conducive for this species to occur.
White-tailed kite (*Elanus leucurus*)	-/FP	Open groves, river valleys, marshes, grasslands. Main requirements are trees for perching and nesting, and open ground with high populations of rodents.	**High:** White-tailed kite has been recorded to eBird within all segments of the Study Area. This species is most common in the winter but does occur in the summer and could nest in tall trees in the Study Area. This species tends to forage near its nesting sites and Griffith Park and Elysian Park are expected to provide high populations of rodents for foraging, and Segment 7 provides numerous waterfowl for foraging. Kites may nest in the tall trees in the survey area.
Southwestern willow flycatcher *(Empidonax traillii extimus)*	FE/SE	Prefers dense vegetation throughout all vegetation layers present in riparian areas. Prefers nesting over or in the immediate vicinity of standing water.	**Low:** One occurrence record for southwestern willow flycatcher was recorded to the CNDDB in 1940 near Griffith Park, but the location is not specific. The BWT on the Study Area is of low quality for this species due to the low density of vegetation within the River and the degradation of habitat from invasive plants, homeless camps, and trash. This species could use the BWT in the Study Area as a migratory stopover, but it would not use the site for any significant portion of its life.
Merlin (*Falco columbarius*)	-/WL	Prefers open conifer woodland, and in migration, uses foothills, marshes, and open country. Requires semi-open terrain with trees for nest sites and open areas for hunting.	**High**: Merlin has been recorded to eBird within all segments of the Study Area. The species winters in the Study Area but migrates north out of Southern California to breed.
American peregrine falcon (*Falco peregrinus anatum*)	BCC/FP	Mostly among mountains ranges, river valleys, and coastlines where songbirds, ducks, and shorebirds and other prey species are plentiful. Nests on cliff ledge and man-made structures such as bridges and skyscrapers.	**High:** American peregrine falcon has been recorded to eBird within all segments of the Study Area. The abundant shorebirds and waterfowl provide foraging opportunities for this species and the bridges and nearby structures provide nesting opportunities.

Species	Status: Federal/State	Preferred Habitat	Probability of Occurrence in Study Site
Yellow-breasted chat (*Icteria virens*)	-/SSC	Brushy tangles, briars, stream thickets. Breeds in very dense scrub (such as willow thickets) and briary tangles, often along streams and at the edges of swamps or ponds.	**High:** Yellow-breasted chat has been recorded to eBird within Segments 3-6 of the Study Area. BWT provides suitable nesting habitat.
Osprey (*Pandion haliaetus*)	-/WL	Found near water, either fresh or salt, where large numbers of fish are present. Nests in large tree near water.	**Present:** Osprey has been recorded to eBird within all segments of the Study Area, and the species was observed in Segment 5 during the field survey. The BWT on the site provides suitable nesting habitat for the species, but the species is most often recorded to eBird during the winter in the Study Area.
Bank swallow (*Riparia riparia*)	-/ST	Found near water; fields, marshes, streams, lakes. Nests in colonies in vertical banks of dirt or sand, usually along rivers or ponds, seldom away from water.	**High:** Bank swallow has been recorded to eBird as foraging within all segments of the Study Area. It is unlikely that the species nests in the Study Area due to the lack of dirt or sand banks preferred for nesting.
Yellow warbler (*Setophaga petechia*)	-/SSC	Restricted to streamside thickets in the west.	**Present:** According to eBird, Yellow warbler is a common summer resident within the BWT in the Study Area, and is expected to nest in high density in the survey area.
least Bell's vireo *(Vireo bellii pusillus)*	FE/SE	Prefers dense, low, shrubby vegetation, generally within early successional stages in riparian areas with a dominance of willows (*Salix* spp.)	**High:** Least Bell's vireo has been recorded to eBird in Segments 4, 5, and 6 of the Study Area. There are no current CNDDB records for the species in the Study Area, but there are 4 records from the late 1800s and early 1900s that are believed to be extirpated populations. The BWT in the Study Area provides suitable nesting habitat for the species despite the degradation because this species has been observed in areas where invasive plants are in high abundance during previous protocol surveys conducted by ESA in the region of the Study Area.
Mammals			
Western Mastiff bat (*Eumops perotis californicus*)	-/SSC	Open, semi-arid to arid habitats including conifer and deciduous woodlands, coastal scrub, chaparral. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	**High (foraging):** One occurrence record for western mastiff bat occurs in the CNDDB in Segment 5 of the Study Area, and was recorded in 1990. Suitable foraging habitat is present within the BWT in the Study Area, but the Study Area lacks sufficient roosting areas for the species. The trees in the Study Area could provide low quality roosting habitat, because it is degraded by illegal encampments, invasive plants and management activities, and trash.
Hoary bat (*Lasiurus cinereus*)	WBWG	A solitary species that utilizes diverse forest habitats that contain a mixture of forest and small openings that provide edge habitat. Roosting sites include squirrel nests, woodpecker holes, and out in the open on the trunks of old trees. Roosts include dense vegetation above with unobstructed space below, allowing bats to drop to gain flight and no potential perches beneath.	**High (foraging):** One occurrence record for hoary bat occurs in the CNDDB in Segment 5 of the Study Area, and was recorded in 1942. Suitable foraging habitat is present within the BWT in the Study Area, but the Study Area lacks preferred roosting areas. The trees on the site could provide some roosting habitat, but it is degraded by illegal encampments, invasive plants and management activities, and trash.

Species	Status: Federal/State	Preferred Habitat	Probability of Occurrence in Study Site
Big free-tailed bat (*Nyctinomops macrotis*)	-/SSC	A migratory species that forms maternity colonies in rock crevices and caves that are typically used long term. Roost mainly in crevices and rocks in cliff situations, with occasional roosts occurring in buildings, caves, and tree cavities.	**High (foraging):** Two occurrence records for big free-tailed bat occur in the CNDDB in Segment 5, recorded in 1985, and in the southern end of Segment 6, recorded in 1983. The species likely uses the BWT and open water for foraging, but no rock crevices or caves occur in the Study Area for maternity colonies. The trees on the site could provide some roosting habitat, but it is degraded by illegal encampments, invasive plants and management activities, and trash.
American badger (*Taxidea taxus*)	-/ SSC	Most abundant in drier, open stages of most shrub, forest, and herbaceous habitats with friable soils. Requires open, uncultivated ground and sufficient burrowing rodent prey.	**Unlikely:** One occurrence record for American badger occurs in the CNDDB in Segments 3-5 of the Study Area, but the information is limited for the record and is not in a specified location. The species likely uses the BWT in the Study Area as a migratory corridor, but the Study Area lacks friable soils, sufficient burrowing rodent prey and uncultivated ground needed for this species to perform most life functions.

Definitions

1. Federal status: USFWS Listing, other non-CA specific listing
BC – Bird of Conservation Concern
FE = Listed as endangered under the federal Endangered Species Act (ESA)
FT = Listed as threatened under ESA

2. State status: CDFW Listing
SE = Listed as endangered under the California Endangered Species Act (CESA)
ST = Listed as threatened under the CESA
SSC = Species of Special Concern as identified by the CDFW
FP = Listed as fully protected under CDFG code
WL = Listed as a Watchlist species by CDFW

3. Other status:

WBWG = Listing by the Western Bat Working Group

Habitat Assessment

The habitats in the Study Area are generally of low quality and degraded by development, invasive species, homeless camps, and trash; native upland, riparian, and aquatic/semi-aquatic habitats in pristine form almost no longer exist within the Study Area. However, a diversity of wildlife is attracted to the River because it is one of the only sources of perennial water and riparian habitat in the vicinity, and the rarity of a perennial river and riparian habitat alone makes it a valuable resource despite the degradation that has occurred to the natural habitat. A summary of vegetation and habitat conditions for each segment in the Study Area and an assessment of the quality of those habitats are presented below in **Table 4**.

TABLE 4
DESCRIPTIONS OF HABITATS AND EXISTING CONDITIONS WITHIN THE STUDY AREA

Area	Existing Conditions
Proposed Pipelines and Pump Stations	No native habitats occur in the proposed pipeline alignments or pump stations, and vegetation largely consists of non-native landscaping species. The existing roadways are lined with landscaping vegetation and street trees that are subjected to high levels of disturbance and are of low quality for wildlife. Several western sycamore and coast live oaks are within the pipeline alignments and are protected from impacts by the City. However, wildlife species that would occur are only those that are habituated to urban areas.
Segment 3	**Riparian Habitat:** 15.7 acres of BWT occurs mostly along the western edge of the segment, with some small BWT areas on the eastern edge. BWT in Segment 3 is of low quality due to a high density of homeless camps, invasive plants, and trash. The BWT provides numerous perching and nesting opportunities for raptors and songbirds that forage and nest in riparian areas. BWT and the invasive understory provide nesting habitat opportunities for special-status birds such as yellow warbler, yellow-breasted chat, and least Bell's vireo. **Aquatic Habitat:** The BWT is surrounded by flowing water, largely on the eastern side of the River and slower flowing, shallow water and ponding water occurs sporadically on the western edge. The channelization of the River, homeless camps, and trash negatively impact the quality of the aquatic habitat. The flowing water in the segment provides habitat for fish, amphibians, waterfowl, shorebirds, and other aquatic and semi-aquatic species. Sandbars, shallow pools, and emergent vegetation at the edges of the BWT provided opportunities for waterfowl, shorebirds, and other species to forage and to nest, and for amphibians to breed. The variation in aquatic and semi-aquatic habitats in this area provides adequate, but not high quality habitat for diverse wildlife community, but lacks native fish.
Segment 4	**Riparian Habitat:** 14.9 acres of BWT that is similar in structure and composition to that found in Segment 3. However, invasive plants had been removed between Fletcher Drive and the southern endpoint, BWT in Segment 3 is of low quality due to a high density of homeless camps, invasive plants, and trash. The BWT provides numerous perching and nesting opportunities for raptors and songbirds that forage and nest in riparian areas. BWT and the invasive understory provide nesting habitat for special-status birds such as yellow warbler, yellow-breasted chat, and least Bell's vireo. **Aquatic Habitat:** The BWT is surrounded by flowing water. Water flow in this segment is similar to that found in Segment 3, with main flow occurring on the eastern side and a low, shallow flow on the western edge sporadically. The channelization of the River, homeless camps, and trash negatively impact the quality of the aquatic habitat. The flowing water in the segment provides habitat for fish, amphibians, waterfowl, shorebirds, and other aquatic and semi-aquatic species. Sandbars, shallow pools, and emergent vegetation at the edges of the BWT provided opportunities for waterfowl, shorebirds, and other species to forage and to nest, and for amphibians to breed. The variation in aquatic and semi-aquatic habitats in this area provides adequate, but not high quality habitat for diverse wildlife community, but lacks native fish.
Segment 5	**Riparian Habitat:** 38.1 acres of BWT that is similar in structure and composition to that found in Segments 3 and 4. However, the BWT in this segment is the widest in the Study Area. Invasive plants were recently removed in the northern half of the segment at the time of the field survey, and the understory was largely bare as a result. The southern half had a dense understory of invasive plants. BWT in Segment 5 is the highest quality in the Study Area due to the greater width and area of habitat that provides denser cover for riparian birds and larger land for terrestrial species. However, the BWT is still of low quality due to a high density of invasive plants, trash, and homeless camps. The BWT provides numerous perching and nesting opportunities for raptors and songbirds that forage and nest in riparian areas. BWT and the invasive understory provide nesting habitat for special-status birds such as yellow warbler, yellow-breasted chat, and least Bell's vireo. **Aquatic Habitat:** The BWT is surrounded by flowing water. Water flow in this segment varies from the east, west, and center of the BWT. The channelization of the River, homeless camps, and trash negatively impact the quality of the aquatic habitat. The flowing water in the segment provides habitat for fish, amphibians, waterfowl, shorebirds, and other aquatic and semi-aquatic species. Sandbars, shallow pools, and emergent vegetation at the edges of the BWT provided opportunities for waterfowl, shorebirds, and other species to forage and to nest, and for amphibians to breed. The variation in aquatic and semi-aquatic habitats in this area provides adequate, but not high quality habitat for diverse wildlife community, but lacks native fish.
Segment 6	**Aquatic Habitat:** The River channel is concrete in this segment and the water forms a thin layer surrounding a fast moving center channel. Low quality habitat for aquatic species occurs in Segment 6 due to the concrete bottom of the River and shallow stream that is not suitable for native fish species. However, this area is an important foraging area for shorebirds and waterfowl due to the availability of invertebrates in the water. No opportunity for nesting occurs for these birds in this segment.

Segment 7	**Sandbar Habitat:** 40.2 acres of rocky sandbar that largely supports ruderal, weedy vegetation occurs along the edges of this Segment, largely in the northern end. The change in tide and River flow makes the acres of land variable in this segment. The sandbar habitat supports an abundance and diversity of shorebirds and waterfowl that forage in the rocky substrate, and this area is an important bird area for that reason. However, the native vegetation has largely been eliminated in this segment, and native saltwater marshes and lagoons that once would have been in this area have been developed. The sandbar habitat is of low quality because it lacks the native vegetation typical of a brackish marsh, is covered in invasive plants, and the natural hydrology of the river has been altered by channelization. Nonetheless this segment is still instrumental for foraging shorebirds and waterfowl that have limited other native areas to use. **Aquatic Habitat:** Brackish water occurs between the sandbars. The channelization of the River and trash negatively impact the quality of the aquatic habitat. The flowing water in the segment provides habitat for brackish fish such as carp and anchovy, waterfowl, shorebirds, and other aquatic and semi-aquatic species. However, native fish species are largely absent from this segment.

Impact Analysis

The impacts from the proposed project include those that would occur from construction of the pipelines and pump stations, which will be limited due to the urban setting and lack of native vegetation or habitats within the construction footprints, and impacts from operation that includes the reduction of water discharged into the River. The proposed project would gradually reduce yearly wastewater discharge into the River by 3,500 AFY over a 10-year period, a 35 percent annual reduction in water discharged from LAGWRP. This corresponds to a reduction from an annual average of 9 to 6 mgd of flow of 14.4 cubic-feet per second (cfs) to 9.6 cfs. The amount of water in the River is variable by year and by season, and in times of low natural flow (generally April to November), the River's main water source is primarily from discharged wastewater. The main source of discharged water to the River is from the Tillman Plant in the Sepulveda Basin, approximately 9 miles upstream from the Study Area. The Tillman Plant discharges a minimum of 22,400 AF per year, and LAGWRP currently discharges 10,500 AF per year. The proposed reduction of 3,500 AFY is 10 percent of the total minimum combined wastewater that is discharged from the Tillman Plant and LAGWRP (see Table 5 in Appendix E). Local surface runoff also contributes to the flow during the low natural flow season, as does water from Burbank Water Reclamation Plan (BWRP) located upstream of the Study Area approximately 1 mile, and Verdugo Wash that flows into the Study Area at the Highway 134 Bridge. Other notable sources of water into the River are at the Arroyo Seco Channel at the north end of Segment 6, the Rio Hondo Channel at the southern end of Segment 6, and the Tujunga Wash approximately 3 miles upstream from the Study Area. The flows contributed by urban runoff and treatment plant discharges are not natural flows.

The proposed project flow reduction would be drowned out during the winter due to much higher flows from the watershed. Using the Hydraulic Modeling worst case condition of August 2008, the proposed project would reduce flows reaching the Pacific Ocean by 4 percent. Effects on Segments 6 and 7 would be less than for Segments 2-5 because of the "diluting" effect of additional flow gains downstream of LAGWRP.

The proposed project would not result in areas of algal mat drying out. The Hydraulic Modeling Report predicts that flows would continue to exceed the capacity of the low flow channel and spill out onto the wider concrete bottom of the flood control channel, maintaining shallow wetted conditions that support algal growth. The modeled average change in water level over Segment 6 is 0.25 inches for the proposed project conditions, and 0.35 inches for cumulative conditions.

There would be change in wetting of the algal mats provided if flows were to fall below 80 cfs. The Hydraulic Modeling predicts that flows would never fall below 80 cfs in the either proposed project or cumulative conditions scenario. Consequently, all flows should continue to spill out of the low flow channel and wet the areas where algae currently grow. Therefore, the modeled flow reductions are expected to result in a less than significant impact on algal growth.

The proposed project reduction represents 4 percent of the worst-case August 2008 flow, and the cumulative flow reduction is 11 percent of flow at the River entry to the estuary. This represents a flow reduction for the driest month of the driest year. Thus, in all other months and years, the proposed project effects would be smaller than modeled. Therefore, the proposed project does not appear likely to have a detrimental effect on the inputs of freshwater to the estuary.

Below is an analysis of potential impacts from construction and implementation of the proposed project to trees protected by local ordinance, riparian vegetation, aquatic and semi-aquatic habitat, and special-status wildlife species that may be present within these habitats. Also included is an analysis of cumulative impacts from other proposed projects in the Study Area that may have a significant effect when considered in combination with potential impacts of the proposed project. The impact analysis for the project will be completed by answering the questions in the California Environmental Quality Act (CEQA) Biological Resources Appendix G Thresholds.

Will the proposed 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 [sic; as of January 1, 2013, this agency is the California Department of Fish & Wildlife] or U.S. Fish and Wildlife Service.**

Construction

The proposed pipelines and pump stations will be located in areas that are urbanized and lack native vegetation or habitats, and no special-status species are anticipated to occur there. Therefore, no impacts will occur to candidate, sensitive, or special-status species during construction of the three pipelines and three pump stations.

Nesting Birds

The proposed project has the potential to remove landscaping shrubs and encroach or remove native trees that could provide nesting sites for migratory birds during the construction of the Camino San Rafael Homes pipeline and of the three proposed pump stations. Birds, and their nesting sites, eggs, and young are protected from "take" by the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code Section 3500. Implementation of **Mitigation Measure Bio-1** below that includes preconstruction surveys for nesting birds and avoidance of active nests, would ensure impacts to nesting birds are avoided.

> **Mitigation Measure Bio-1**: Prior to removal, trimming, or disturbance of vegetation that could be used as nesting habitat for birds during nesting season (typically February through August), a qualified biologist will conduct a preconstruction survey for nesting birds. If active nests are identified, the biologist will apply a no-work buffer around the nest at an appropriate distance that would insure no incidental take of the nest from the project. Typical buffer distances are 300 feet for songbirds and 500 feet for raptors, but the distance in the field will be determined by the biologist and will be based on the ambient conditions, type of work proposed and distance from the nest, and the species of bird that is nesting. The buffer may be considerably less than the typical 300 or 500 feet, at the discretion of the project biologist. The no-work buffer will remain in place until the biologist has determined the young have fledged and are no longer dependent on the nest site.

Operation

Operation of the project includes a gradual reduction of 3,500 AFY of wastewater discharged by LAGWRP into the River over a 10-year period. A total of 15 special-status wildlife species are known to occur or have a high potential to occur in Segments 3-7 of the River, including one reptile (two-striped garter snake), 11 bird species (Cooper's hawk, sharp-shinned hawk, Vaux's swift, white-tailed kite, American peregrine falcon, merlin, yellow-breasted chat, osprey, bank swallow, yellow warbler, and least Bell's vireo), and three bat species (western mastiff bat, hoary bat, and big free-tailed bat). These species, if present, would depend on the BWT (two-striped garter snake also relies on aquatic habitat) in the River for habitat.

During times of naturally low flow in the River (April to November) the BWT relies on upstream discharges of wastewater. The project proposes to discontinue the discharge of 3,500 AF of wastewater that is currently discharged from LAGWRP annually. However, the reduction in volume of discharge from the LAGWRP is 10 percent of wastewater that is discharged into the River (see Table 5 in Appendix E). Additional water into the River comes from surface runoff, the BWRP, and from the Verdugo Wash. Other notable sources of water into the River that supports the BWT in the Study Area include the Tujunga Wash approximately 3 miles upstream from the Study Area. The proposed project would reduce the discharge volume at LAGWRP at all times of year. The reduction would result in a reduction in water depth of less than one inch throughout the Study Area segments. Flows from other sources would continue to provide water sufficient to span the channel bottom from edge to edge. As a result, none of the riparian habitat that has emerged in the channel would be stranded as a result of the reduced flow and impacts would be unmeasurable. Water would continue to support the root zones beneath the channel. Similarly, the reduced flow would not reduce aquatic habitat acreage since the flow would continue to cover the channel bottom. For these reasons, the reduction of flow will not result in any measurable reduction of BWT habitat in the Study Area.

Considering there would be no measurable reduction of BWT from the reduced discharge from LAGWRP and no BWT will be removed during the project, the resident and migratory wildlife community that depends on the habitat and water in the River for foraging, breeding and refuge will be unaffected by the proposed project. Even though the River has been channelized and greatly affected by urbanization, the riparian habitat in the river is dynamic, and the variability in flows that occur from rainfall and other sources of water in the River will be unaffected by the proposed project. Moreover, the reduced discharge would not cause a population of special-status species to drop below self-sustaining levels, since none of the wildlife that uses the River is dependent solely on the water that is discharged from LAGWRP. Therefore, impacts to special-status wildlife would be less than significant.

Cumulative Effects

The proposed project would contribute to reduced flow in the River. In addition to the proposed project, BWRP, located adjacent to the Study Area, has proposed additional recycled water efforts that will divert wastewater discharges from the River. A portion of BWRP's wastewater flows will be diverted to support no-potable water demands within the City of Burbank and portion of the City of Los Angeles, thereby reducing the quantity of potable water supplies need to serve these uses.

Ultimately, if additional reduction of flows occurs within the River, this would have a corresponding effect on the acreage of BWT habitats within the River. Aquatic habitats would also diminish within the River as less water is discharged from existing sources. However, these changes could reflect a more natural condition of the River, as the flows contributed by urban runoff and treatment plant discharges are not natural flows. In fact, the historic condition of the River in the dry season in this location was likely entirely upwelling groundwater. The historic dry season flows likely infiltrated into the ground prior to reaching the Pacific Ocean.

The reduction in perennial flow in the Los Angeles River would resemble a more natural condition of the River compared with historic conditions. Although the proposed project would contribute to a reduced flow in the river channel, the project's contribution would be less than 10 percent of the existing flows and would not be cumulatively considerable. Least Bell's vireo is known to occur in the River, but in habitat that is supported upstream from LAGWRP. Therefore, any reduction in wastewater discharge by the proposed project would not have an effect on habitat occupied by least Bell's vireo in the River upstream from LAGWRP.

Lastly, as discussed previously above, the modeled average change in water level over Segment 6 is 0.25 inches for the proposed project conditions, and 0.35 inches for cumulative conditions. Consequently, all flows should continue to spill out of the low flow channel and wet the areas where algae currently grow. The modeled flow reductions are expected to result in a less than significant impact on algal growth. The proposed project reduction represents 4 percent of the worst-case August 2008 flow, and the cumulative flow reduction is 10 percent of flow at the River entry to the estuary. The proposed project and cumulative wastewater reductions would appear to not have a detrimental effect on the inputs of freshwater to the estuary.

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 [sic; California Department of Fish and Wildlife] or US Fish and Wildlife Service.

BWT and aquatic habitats are known to occur in Segments 3-7 of the River. As discussed above, there would be no measurable reduction of BWT from the reduced discharge from LAGWRP and no BWT will be removed during the project. Therefore, no impacts to riparian habitat will occur from the project.

Aquatic Habitat

Aquatic habitat occurs in all segments of the Study Area, varying between fast moving in narrow areas, thin sheet-flow over concrete, slower turbulent water over boulders, slow-moving water along the edge of BWT, and areas of ponding water. The reduction in volume of discharged water by the proposed project would be 3,500 AF from the River each year, a 10 percent decrease of wastewater that is discharged into the River when considering the current combined discharge from the Tillman Plant and LAGWRP. Additional water into the River comes from surface runoff, BWRP, and the Verdugo Wash. Additional sources of water into the River are from the Arroyo Seco Channel at the north end of Segment 6, the Rio Hondo Channel at the southern end of Segment 6, and the Tujunga Wash. The BWT in the Study Area helps to slow the velocity of water and creates pools that can be used by certain fish and aquatic species, as well as birds. The reduced discharge would reduce the depth of flow within the river channel, but would not significantly reduce or eliminate areas of slow-moving water or pools around the margins of areas with BWT. The current typical maximum depth of water in the Study Areas is 6.5 feet. The flow reduction could lower the depth of water by less than one inch, but not to a point that would affect fish migration or movement by any of the native aquatic species within the River. In Segment 6 of the Study Area, the flow reduction would not reduce the overall water depth enough to eliminate the availability of foraging habitat for fish, amphibians, shorebirds or any other wildlife that may use the River for foraging or breeding. The proposed project’s reduction of freshwater into the Estuary from the River would not significantly alter the brackish water interface at the mouth of the river. The estuary would continue to be fed by freshwater emptying into the unconfined Los Angeles harbor. For these reasons, the reduction in flow from LAGWRP would not significantly reduce aquatic habitat values in the Study Area.

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.

The River, including all of the aquatic habitat in the Study Area, is a Traditional Navigable Water (TNW) and under the jurisdiction of the Army Corps of Engineers. For the reasons described above in the Impact Analysis of Aquatic Habitat, the reduction in flow from LAGWRP would not significantly reduce aquatic habitat values in the Study Area. Therefore, the project would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act.

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.

The River functions as a wildlife migratory corridor for urban wildlife such as rodents and raccoons. However, no direct impacts to the River would occur from the proposed project, and, according to analysis presented above, indirect impacts to riparian and aquatic habitats will be less than significant. Therefore, the project would not interfere 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 within the River.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

The City of Glendale Indigenous Tree Program protects six native trees, including western sycamore and coast live oak. Approximately ten western sycamore trees occur within the proposed San Rafael Homes pipeline alignment, and two coast live oak trees occur at proposed pump station #1. Due to the proximity to the proposed project features, the roots of these trees may be encroached, or the tree may require removal or relocation depending on the placement of the proposed San Rafael Homes pipeline and pump station #1. Encroachment, removal, or relocation of western sycamore or coast live oak requires a permit from the city. Implementation of **Mitigation Measure Bio-2** below, which includes applying for an Indigenous Tree permit from the City of Glendale, will reduce the potential impacts to native trees protected by the City's Indigenous Tree Program to a less than significant level.

> **Mitigation Measure Bio-2**: An Indigenous Tree Program permit will be obtained from the City of Glendale prior to removal, encroachment, or substantial trimming (topping or pruning more than one-quarter of total live foliage) of native trees protected by the City of Glendale's Indigenous Tree Program, including western sycamore (*Platanus racemosa*) and coast live oak (*Quercus agrifolia*). For every tree removed by the project, two replacement trees at a minimum 15-gallon size will be planted.

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.

The proposed project is not within an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved habitat conservation plan, and, therefore, no impacts will occur as a result of the proposed project.

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Appendix A

Photolog

Photo 1: Depicts the outflow from the Burbank Western Channel into the Los Angeles River at the north western edge of the Study Area. Photo was taken from the bike path at the western end of Segment 1 facing northwest.

Photo 2: Depicts BWT in the eastern end of Segment 1 where recent invasive plant removal resulted in large areas of bare ground. Photo was taken from the bike path facing northwest.

Photo 3: Depicts waterfowl, shorebirds, and cormorants using a variety of aquatic habitat and sandbar at the eastern edge of BWT in Segment 1. Photo was taken from the bike path facing north.

Photo 4: Depicts a thin sheet of flow over the wide, concrete bottom of Segment 2 where the Verdugo Wash enters the Los Angeles River. Photo was taken from the bike path at the southern end of Segment 2 facing north.

Photo 5: Depicts black-necked stilts foraging at the western end of Segment 2. Photo was taken from the bike path facing northeast.

Photo 6: Depicts BWT in the northern portion of Segment 3 with a dense understory of giant reed. Photo was taken from the bike path facing northeast.

Photo 7: Depicts the BWT at the southern end of Segment 3. Photo was taken from Los Feliz Boulevard facing north.

Photo 8: Depicts homeless camp in the middle of the BWT in the central portion of Segment 3. The ground is bare and soils compacted, and trash is abundant. Photo taken from the bike path facing east.

Photo 9: Depicts typical invasive plant cover (giant reed and Mexican fan palm) found in unmanaged areas of the BWT. Photo was taken from the bike path in the center of Segment 3, facing east.

Photo 10: Depicts illegal dumping and burned trash at the access point to the bike path at Los Feliz Boulevard in Segment 3, and exemplifies the types and quantity of materials that blow and are dumped into the River in the Study Area. Photo was taken from the bike path facing southwest.

Photo 11: Depicts the BWT in the northern portion of Segment 4. Photo was taken facing north from a pedestrian bridge over the River.

Photo 12: Depicts BWT in the central portion of Segment 4. Photo taken from the bike path facing northeast.

Photo 13: Depicts the BWT in the southern edge of Segment 4 where invasive plants have recently been removed, exposing bare ground and trash. Photo was taken from the bike path facing southeast.

Photo 14: Depicts the BWT in the northern half of Segment 5 where recent invasive plant management has left the understory largely bare. Photo was taken from the bike path facing east.

Photo 15: Depicts the transition zone between BWT with recent invasive removal on the left, and BWT that has not been managed in several years. Photo was taken from the bike path in the central portion of Segment 5, facing southeast.

Photo 16: Depicts build-up of trash in matted-giant reed in the BWT in the southern half of Segment 5. Photo was taken from the bike path facing east.

Photo 17: Depicts wildlife utilizing variable aquatic habitats along the edge of the BWT in the southern end of Segment 5.

Photo 18: Depicts the BWT in the southern-central portion of Segment 5. Photo was taken from the bike path facing northeast.

Photo 19: Depicts the denser and wider BWT in the southern end of Segment 5, and a homeless camp on the slope of the riverbed. Photo was taken from the bike path facing northeast.

Photo 20: Depicts the transition at the southern end of Segment 5 to concrete bottom of Segment 6, where the River forma a thin sheet of water at the edges of a deeper, fast moving center channel. Photo was taken from the bike path facing southeast.

Appendix B

Wildlife Species in Segments 1-5 (ACOE 2013)

Largemouth bass	*Micropterus salmoides*
Black bullhead	*Ictalarus (Ameiurus) melas*
Carp	*Cyprinus carpio*
Mosquitofish	*Gambusia affinis*
Green sunfish	*Lepomis cyanellus*
Tilapia	*Oreochromis spp.*
Western toad	*Bufo boreas*
California Treefrog	*Pseudacris regilla*
Bullfrog	*Rana catesbeiana*
Red-eared Slider	*Trachemys scripta elegans*
Southern Alligator Lizard	*Elgaria multicarinata*
Western Fence Lizard	*Sceloporus occidentalis*
Side-blotched lizard	*Uta stansburiana*
Two-Striped Garter Snake	*Thamnophis hammondii*
Pied-billed Grebe	*Podilymbus podiceps*
Eared Grebe	*Podiceps nigricollis*
Double-crested Cormorant	*Phalacrocorax auritus*
Great blue heron	*Ardea herodias*
Great Egret	*Ardea alba*
Snowy Egret	*Egretta thula*
Green Heron	*Butorides virescens*
Black-crowned Night-Heron	*Nycticorax nycticorax*
Turkey Vulture	*Cathartes aura*
Canada Goose	*Branta canadensis*
Gadwall	*Anas strepera*
American Wigeon	*Anas americana*
Mallard	*Anas platyrhynchos*
Blue-winged Teal	*Anas discors*
Cinnamon teal	*Anas cyanoptera*
Northern Shoveler	*Anas clypeata*
Northern Pintail	*Anas acuta*
Green-winged Teal	*Anas crecca*
Bufflehead	*Bucephala albeola*
Hooded Merganser	*Lophodytes cucullatus*
Ruddy Duck	*Oxyura jamaicensis*
Muscovy Duck	*Cairina moschata*
Osprey	*Pandion haliaetus*
White-tailed Kite	*Elanus leucurus*
Sharp-shinned Hawk	*Accipiter striatus*
Cooper's Hawk	*Accipiter cooperii*
Red-shouldered Hawk	*Buteo lineatus*
Red-tailed Hawk	*Buteo jamaicensis*
American Kestrel	*Falco sparverius*
Merlin	*Falco columbarius*
Peregrine Falcon	*Falco peregrinus*
Sora	*Porzana carolina*
Common Moorhen	*Gallinula chloropus*
American Coot	*Fulica americana*
Killdeer	*Charadrius vociferus*

Black-necked Stilt	*Himantopus mexicanus*
Greater Yellowlegs	*Tringa melanoleuca*
Lesser Yellowlegs	*Tringa flavipes*
Spotted Sandpiper	*Actitis macularia*
Western sandpiper	*Calidris mauri*
Least Sandpiper	*Calidris minutilla*
Wilson's Snipe	*Gallinago delicata*
Ring-billed Gull	*Larus delawarensis*
California Gull	*Larus californicus*
Western Gull	*Larus occidentalis*
Caspian Tern	*Sterna caspia*
Rock Pigeon	*Columba livia*
Mourning Dove	*Zenaida macroura*
Barn Owl	*Tyto alba*
Great Horned Owl	*Bubo virginianus*
Vaux's Swift	*Chaetura vauxi*
White-throated Swift	*Aeronautes saxatalis*
Black-chinned Hummingbird	*Archilochus alexandri*
Anna's Hummingbird	*Calypte anna*
Rufous Hummingbird	*Selasphorus rufus*
Allen's Hummingbird	*Selasphorus sasin*
Belted Kingfisher	*Ceryle alcyon*
Acorn Woodpecker	*Melanerpes formicivorus*
Red-breasted Sapsucker	*Sphyrapicus ruber*
Nuttall's Woodpecker	*Picoides nuttallii*
Downy Woodpecker	*Picoides pubescens*
Northern Flicker	*Colaptes auratus*
Western Wood-pewee	*Contopus sordidulus*
Willow Flycatcher	*Empidonax traillii*
Pacific-slope Flycatcher	*Empidonax difficilis*
Black Phoebe	*Sayornis nigricans*
Say's Phoebe	*Sayornis saya*
Ash-throated Flycatcher	*Myiarchus cinerascens*
Cassin's Kingbird	*Tyrannus vociferans*
Western Kingbird	*Tyrannus verticalis*
Loggerhead Shrike	*Lanius ludovicianus*
Bell's Vireo	*Vireo bellii*
Cassin's Vireo	*Vireo cassinii*
Hutton's Vireo	*Vireo huttoni*
Warbling Vireo	*Vireo gilvus*
Western Scrub Jay	*Aphelocoma californica*
American Crow	*Corvus brachyrhynchos*
Common Raven	*Corvus corax*
Tree Swallow	*Tachycineta bicolor*
Violet-green Swallow	*Tachycineta thalassina*
Northern rough winged swallow	*Stelgidopteryx serripennis*
Cliff Swallow	*Petrochelidon pyrrhonota*
Barn Swallow	*Hirundo rustica*
Oak Titmouse	*Baeolophus inornatus*
Bushtit	*Psaltriparus minimus*

Bewick's Wren	*Thryomanes bewickii*
House Wren	*Troglodytes aedon*
Ruby-crowned Kinglet	*Regulus calendula*
Blue-gray Gnatcatcher	*Polioptila caerulea*
Western Bluebird	*Sialia mexicana*
Swainson's Thrush	*Catharus ustulatus*
Hermit Thrush	*Catharus guttatus*
American Robin	*Turdus migratorius*
Wrentit	*Chamaea fasciata*
Northern mockingbird	*Mimus polyglottos*
California Thrasher	*Toxostoma redivivum*
European Starling	*Sturnus vulgaris*
American Pipit	*Anthus rubescens*
Cedar Waxwing	*Bombycilla cedrorum*
Phainopepla	*Phainopepla nitens*
Orange-crowned Warbler	*Vermivora celata*
Nashville Warbler	*Vermivora ruficapilla*
Yellow Warbler	*Dendroica petechia*
Yellow-rumped Warbler	*Dendroica coronata*
Black-throated Gray Warbler	*Dendroica nigrescens*
Townsend's Warbler	*Dendroica townsendi*
Hermit Warbler	*Dendroica occidentalis*
MacGillivray's Warbler	*Oporornis tolmiei*
Common Yellowthroat	*Geothlypis trichas*
Wilson's Warbler	*Wilsonia pusilla*
Yellow-breasted Chat	*Icteria virens*
Western Tanager	*Piranga ludoviciana*
Spotted Towhee	*Pipilo maculatus*
California Towhee	*Pipilo crissalis*
Chipping Sparrow	*Spizella passerina*
Lark Sparrow	*Chondestes grammacus*
Savannah Sparrow	*Passerculus sandwichensis*
Song sparrow	*Melospiza melodia*
Lincoln's Sparrow	*Melospiza lincolnii*
White-crowned Sparrow	*Zonotrichia leucophrys*
Golden-crowned Sparrow	*Zonotrichia atricapilla*
Dark-eyed Junco	*Junco hyemalis*
Black-headed Grosbeak	*Pheucticus melanocephalus*
Blue Grosbeak	*Guiraca caerulea*
Lazuli Bunting	*Passerina amoena*
Red-winged blackbird	*Agelaius phoeniceus*
Western Meadowlark	*Sturnella neglecta*
Brewer's Blackbird	*Euphagus cyanocephalus*
Great tailed Grackle	*Quiscalus mexicanus*
Brown-headed Cowbird	*Molothrus ater*
Hooded Oriole	*Icterus cucullatus*
Bullock's Oriole	*Icterus bullockii*
Purple Finch	*Carpodacus purpureus*
House Finch	*Carpodacus mexicanus*
Lesser Goldfinch	*Carduelis psaltria*

Lawrence's Goldfinch	*Carduelis lawrencei*
American Goldfinch	*Carduelis tristis*
House Sparrow	*Passer domesticus*
Virginia opossum	*Didelphis virginiana*
California Myotis	*Myotis californicus*
Yuma Myotis	*Myotis yumanensis*
Silver-haired Bat	*Lasionycteris noctivagans*
Western Pipistrelle	*Pipistrellus hesperus*
Big Brown Bat	*Eptesicus fuscus*
Western Red Bat	*Lasiurus blossevillii*
Hoary Bat	*Lasiurus cinereus*
Townsend's Big-eared Bat	*Corynorhinus townsendii*
Brazilian Free-tailed Bat	*Tadarida brasiliensis*
Desert Cottontail	*Sylvilagus audubonii*
California ground squirrel	*Spermophilus beecheyi*
Eastern Fox Squirrel	*Sciurus niger*
Little Pocket Mouse	*Perognathus longimembris*
Western Harvest Mouse	*Reithrodontomys megalotis*
Deer Mouse	*Peromyscus maniculatus*
Dusky-footed Wood Rat	*Neotoma fuscipes*
Black Rat	*Rattus rattus*
Norway Rat	*Rattus norvegicus*
House Mouse	*Mus musculus*
Coyote	*Canis latrans*
Raccoon	*Procyon lotor*
Striped skunk	*Mephitis mephitis*
Bobcat	*Lynx rufus*
Amazon sailfin catfish	*Pterygoplichthys pardalis*
African clawed frog	*Xenopus laevis*
Gopher snake	*Pituophis catenifer*
Southern Pacific Rattlesnake	*Crotalus helleri*
Ring-Necked Duck	Aythya collaris
Domestic Dog	Canis familiaris
Domestic Cat	Felis catus

Appendix C1

Cultural Resources Assessment

Confidential Cultural Resources Report
available upon request from authorized reviewers

Appendix C2
Paleontological Resources Assessment

Confidential Paleontological Resources Report available upon request from authorized reviewers

ESA

Appendix D

Greenhouse Gas Emissions Modeling Data

Glendale Wastewater Project (Pasadena)

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	0.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 31

Climate Zone 12 **Operational Year** 2019

Utility Company Glendale Water & Power

CO2 Intensity (lb/MWhr) 1115.33 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Installation of Pipeline

Construction Phase - Project Specific Information

Off-road Equipment - Project Specific Information

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2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.4494	3.7137	3.4176	6.2400e-003	0.1009	0.2183	0.3192	0.0231	0.2107	0.2339	0.0000	555.9793	555.9793	0.0889	0.0000	558.2019
2019	0.1787	1.6989	1.4614	3.0200e-003	0.0489	0.0829	0.1317	0.0120	0.0792	0.0912	0.0000	271.7757	271.7757	0.0463	0.0000	272.9340
Maximum	**0.4494**	**3.7137**	**3.4176**	**6.2400e-003**	**0.1009**	**0.2183**	**0.3192**	**0.0231**	**0.2107**	**0.2339**	**0.0000**	**555.9793**	**555.9793**	**0.0889**	**0.0000**	**558.2019**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Phase 1 Mobilization	Site Preparation	1/1/2018	1/2/2018	5	2	11
2	Phase 1 Pavement Cutting	Demolition	1/3/2018	1/12/2018	5	8	12
3	Phase 1 Excavation, Pipe Laying, Backfill	Building Construction	1/13/2018	7/25/2018	5	138	13
4	Phase 1 Paving	Paving	7/26/2018	8/8/2018	5	10	14
5	Phase 1 De-mobilization	Site Preparation	8/9/2018	8/12/2018	5	2	15
6	Phase 2 Mobilization	Site Preparation	8/13/2018	8/14/2018	5	2	16
7	Phase 2 Pavement Cutting	Demolition	8/15/2018	8/24/2018	5	8	17
8	Phase 2 Excavation, Pipe Laying, Backfill	Building Construction	8/25/2018	1/27/2019	5	110	18
9	Phase 2 Paving	Paving	1/28/2019	2/8/2019	5	10	19
10	Phase 2 Pump Station	Building Construction	2/9/2019	3/22/2019	5	30	20
11	Phase 2 De-mobilization	Site Preparation	3/23/2019	3/26/2019	5	2	21
12	Phase 3 Mobilization	Site Preparation	3/27/2019	3/28/2019	5	2	22
13	Phase 3 Pavement Cutting	Demolition	3/29/2019	4/4/2019	5	5	23
14	Phase 3 Excavation, Pipe Laying, Backfill	Building Construction	4/5/2019	6/21/2019	5	56	24
15	Phase 3 Paving	Paving	6/22/2019	6/28/2019	5	5	25
16	Phase 3 Pump Station	Building Construction	6/29/2019	9/20/2019	5	60	26
17	Phase 3 De-mobilization	Site Preparation	9/21/2019	9/24/2019	5	2	27

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Phase 1 Mobilization					
Phase 1 Mobilization					
Phase 1 Pavement Cutting	Concrete/Industrial Saws	1	8.00	81	0.73
Phase 1 Excavation, Pipe Laying, Backfill	Air Compressors	2	8.00	78	0.48
Phase 1 Excavation, Pipe Laying, Backfill	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Phase 1 Excavation, Pipe Laying, Backfill	Excavators	2	8.00	158	0.38
Phase 1 Excavation, Pipe Laying, Backfill	Forklifts	1	8.00	89	0.20
Phase 1 Excavation, Pipe Laying, Backfill	Generator Sets	2	8.00	84	0.74
Phase 1 Excavation, Pipe Laying, Backfill	Welders	1	8.00	46	0.45
Phase 1 Paving	Crushing/Proc. Equipment	1	8.00	85	0.78
Phase 1 Paving	Paving Equipment	1	8.00	132	0.36
Phase 1 Paving	Rollers	1	8.00	80	0.38
Phase 1 De-mobilization	Sweepers/Scrubbers	1	8.00	64	0.46
Phase 2 Mobilization					
Phase 2 Mobilization					
Phase 2 Pavement Cutting	Concrete/Industrial Saws	1	8.00	81	0.73
Phase 2 Excavation, Pipe Laying, Backfill	Air Compressors	2	8.00	78	0.48
Phase 2 Excavation, Pipe Laying, Backfill	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Phase 2 Excavation, Pipe Laying, Backfill	Excavators	2	8.00	158	0.38
Phase 2 Excavation, Pipe Laying, Backfill	Forklifts	1	8.00	89	0.20
Phase 2 Excavation, Pipe Laying, Backfill	Generator Sets	2	8.00	84	0.74
Phase 2 Excavation, Pipe Laying, Backfill	Welders	1	8.00	46	0.45
Phase 2 Paving	Crushing/Proc. Equipment	1	8.00	85	0.78
Phase 2 Paving	Paving Equipment	1	8.00	132	0.36
Phase 2 Paving	Rollers	1	8.00	80	0.38
Phase 2 Pump Station	Excavators	1	8.00	158	0.38
Phase 2 Pump Station	Cranes	1	8.00	231	0.29
Phase 2 De-mobilization	Sweepers/Scrubbers	1	8.00	64	0.46

Phase 3 Mobilization					
Phase 3 Mobilization					
Phase 3 Pavement Cutting	Concrete/Industrial Saws	1	8.00	81	0.73
Phase 3 Excavation, Pipe Laying, Backfill	Air Compressors	2	8.00	78	0.48
Phase 3 Excavation, Pipe Laying, Backfill	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Phase 3 Excavation, Pipe Laying, Backfill	Excavators	2	8.00	158	0.38
Phase 3 Excavation, Pipe Laying, Backfill	Forklifts	1	8.00	89	0.20
Phase 3 Excavation, Pipe Laying, Backfill	Generator Sets	2	8.00	84	0.74
Phase 3 Excavation, Pipe Laying, Backfill	Welders	1	8.00	46	0.45
Phase 3 Paving	Crushing/Proc. Equipment	1	8.00	85	0.78
Phase 3 Paving	Paving Equipment	1	8.00	132	0.36
Phase 3 Paving	Rollers	1	8.00	80	0.38
Phase 3 Pump Station	Excavators	1	8.00	158	0.38
Phase 3 Pump Station	Cranes	1	8.00	231	0.29
Phase 3 De-mobilization	Sweepers/Scrubbers	1	8.00	64	0.46

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Phase 1 Mobilization	0	40.00	10.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 Pavement Cutting	1	40.00	10.00	74.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 Excavation, Pipe Laying, Backfill	10	40.00	10.00	550.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 Paving	3	40.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 De-mobilization	1	40.00	10.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Mobilization	0	20.00	10.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Pavement Cutting	1	20.00	10.00	81.48	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Excavation, Pipe Laying, Backfill	10	20.00	10.00	710.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Phase 2 Paving	3	20.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Pump Station	2	20.00	10.00	1.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 De-mobilization	1	20.00	10.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 Mobilization	0	20.00	10.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 Pavement Cutting	1	20.00	10.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 Excavation, Pipe Laying, Backfill	10	20.00	10.00	810.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 Paving	3	20.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 Pump Station	2	20.00	10.00	1.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 De-mobilization	1	20.00	10.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Phase 1 Mobilization - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	8.1000e-004	1.6000e-004	0.0000	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1940	0.1940	1.0000e-005	0.0000	0.1943
Vendor	4.0000e-005	1.2400e-003	3.2000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2485	0.2485	2.0000e-005	0.0000	0.2489
Worker	2.1000e-004	1.7000e-004	1.8700e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4214	0.4214	1.0000e-005	0.0000	0.4218
Total	**2.7000e-004**	**2.2200e-003**	**2.3500e-003**	**0.0000**	**5.4000e-004**	**1.0000e-005**	**5.6000e-004**	**1.5000e-004**	**1.0000e-005**	**1.6000e-004**	**0.0000**	**0.8639**	**0.8639**	**4.0000e-005**	**0.0000**	**0.8650**

3.3 Phase 1 Pavement Cutting - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0161	0.0000	0.0161	2.4400e-003	0.0000	2.4400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0800e-003	0.0157	0.0149	3.0000e-005		1.0700e-003	1.0700e-003		1.0700e-003	1.0700e-003	0.0000	2.1506	2.1506	1.7000e-004	0.0000	2.1548
Total	**2.0800e-003**	**0.0157**	**0.0149**	**3.0000e-005**	**0.0161**	**1.0700e-003**	**0.0172**	**2.4400e-003**	**1.0700e-003**	**3.5100e-003**	**0.0000**	**2.1506**	**2.1506**	**1.7000e-004**	**0.0000**	**2.1548**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.4000e-004	0.0120	2.3300e-003	3.0000e-005	6.4000e-004	5.0000e-005	6.8000e-004	1.7000e-004	4.0000e-005	2.2000e-004	0.0000	2.8709	2.8709	2.1000e-004	0.0000	2.8761
Vendor	1.8000e-004	4.9600e-003	1.3000e-003	1.0000e-005	2.5000e-004	4.0000e-005	2.9000e-004	7.0000e-005	3.0000e-005	1.1000e-004	0.0000	0.9940	0.9940	7.0000e-005	0.0000	0.9958
Worker	8.5000e-004	7.0000e-004	7.4800e-003	2.0000e-005	1.7600e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.6856	1.6856	6.0000e-005	0.0000	1.6870
Total	**1.3700e-003**	**0.0177**	**0.0111**	**6.0000e-005**	**2.6500e-003**	**1.0000e-004**	**2.7400e-003**	**7.1000e-004**	**8.0000e-005**	**8.1000e-004**	**0.0000**	**5.5504**	**5.5504**	**3.4000e-004**	**0.0000**	**5.5589**

3.4 Phase 1 Excavation, Pipe Laying, Backfill - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.1000e-004	0.0000	3.1000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2441	1.9515	1.8446	2.8800e-003		0.1268	0.1268		0.1224	0.1224	0.0000	251.7968	251.7968	0.0480	0.0000	252.9973
Total	**0.2441**	**1.9515**	**1.8446**	**2.8800e-003**	**3.1000e-004**	**0.1268**	**0.1271**	**5.0000e-005**	**0.1224**	**0.1224**	**0.0000**	**251.7968**	**251.7968**	**0.0480**	**0.0000**	**252.9973**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.5300e-003	0.0894	0.0173	2.2000e-004	4.7300e-003	3.4000e-004	5.0600e-003	1.3000e-003	3.2000e-004	1.6200e-003	0.0000	21.3374	21.3374	1.5700e-003	0.0000	21.3766
Vendor	3.0200e-003	0.0856	0.0224	1.8000e-004	4.3500e-003	6.2000e-004	4.9700e-003	1.2500e-003	5.9000e-004	1.8400e-003	0.0000	17.1459	17.1459	1.2400e-003	0.0000	17.1768
Worker	0.0146	0.0120	0.1290	3.2000e-004	0.0303	2.5000e-004	0.0305	8.0400e-003	2.3000e-004	8.2700e-003	0.0000	29.0763	29.0763	1.0000e-003	0.0000	29.1012
Total	**0.0202**	**0.1870**	**0.1688**	**7.2000e-004**	**0.0394**	**1.2100e-003**	**0.0406**	**0.0106**	**1.1400e-003**	**0.0117**	**0.0000**	**67.5596**	**67.5596**	**3.8100e-003**	**0.0000**	**67.6546**

3.5 Phase 1 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.8700e-003	0.0485	0.0444	7.0000e-005		3.1700e-003	3.1700e-003		3.0500e-003	3.0500e-003	0.0000	6.0711	6.0711	1.2300e-003	0.0000	6.1018
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.8700e-003**	**0.0485**	**0.0444**	**7.0000e-005**		**3.1700e-003**	**3.1700e-003**		**3.0500e-003**	**3.0500e-003**	**0.0000**	**6.0711**	**6.0711**	**1.2300e-003**	**0.0000**	**6.1018**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2000e-004	6.2000e-003	1.6200e-003	1.0000e-005	3.2000e-004	4.0000e-005	3.6000e-004	9.0000e-005	4.0000e-005	1.3000e-004	0.0000	1.2425	1.2425	9.0000e-005	0.0000	1.2447
Worker	1.0600e-003	8.7000e-004	9.3500e-003	2.0000e-005	2.1900e-003	2.0000e-005	2.2100e-003	5.8000e-004	2.0000e-005	6.0000e-004	0.0000	2.1070	2.1070	7.0000e-005	0.0000	2.1088
Total	**1.2800e-003**	**7.0700e-003**	**0.0110**	**3.0000e-005**	**2.5100e-003**	**6.0000e-005**	**2.5700e-003**	**6.7000e-004**	**6.0000e-005**	**7.3000e-004**	**0.0000**	**3.3494**	**3.3494**	**1.6000e-004**	**0.0000**	**3.3535**

3.6 Phase 1 De-mobilization - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.1000e-004	2.6700e-003	2.0200e-003	0.0000		2.2000e-004	2.2000e-004		2.0000e-004	2.0000e-004	0.0000	0.2320	0.2320	7.0000e-005	0.0000	0.2338
Total	**3.1000e-004**	**2.6700e-003**	**2.0200e-003**	**0.0000**		**2.2000e-004**	**2.2000e-004**		**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.2320**	**0.2320**	**7.0000e-005**	**0.0000**	**0.2338**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	8.1000e-004	1.6000e-004	0.0000	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1940	0.1940	1.0000e-005	0.0000	0.1943
Vendor	4.0000e-005	1.2400e-003	3.2000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2485	0.2485	2.0000e-005	0.0000	0.2489
Worker	2.1000e-004	1.7000e-004	1.8700e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4214	0.4214	1.0000e-005	0.0000	0.4218
Total	**2.7000e-004**	**2.2200e-003**	**2.3500e-003**	**0.0000**	**5.4000e-004**	**1.0000e-005**	**5.6000e-004**	**1.5000e-004**	**1.0000e-005**	**1.6000e-004**	**0.0000**	**0.8639**	**0.8639**	**4.0000e-005**	**0.0000**	**0.8650**

3.7 Phase 2 Mobilization - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	8.1000e-004	1.6000e-004	0.0000	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1940	0.1940	1.0000e-005	0.0000	0.1943
Vendor	4.0000e-005	1.2400e-003	3.2000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2485	0.2485	2.0000e-005	0.0000	0.2489
Worker	1.1000e-004	9.0000e-005	9.4000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2107	0.2107	1.0000e-005	0.0000	0.2109
Total	**1.7000e-004**	**2.1400e-003**	**1.4200e-003**	**0.0000**	**3.2000e-004**	**1.0000e-005**	**3.4000e-004**	**9.0000e-005**	**1.0000e-005**	**1.0000e-004**	**0.0000**	**0.6532**	**0.6532**	**4.0000e-005**	**0.0000**	**0.6542**

3.8 Phase 2 Pavement Cutting - 2018

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust					0.0177	0.0000	0.0177	2.6700e-003	0.0000	2.6700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0800e-003	0.0157	0.0149	3.0000e-005		1.0700e-003	1.0700e-003		1.0700e-003	1.0700e-003	0.0000	2.1506	2.1506	1.7000e-004	0.0000	2.1548
Total	**2.0800e-003**	**0.0157**	**0.0149**	**3.0000e-005**	**0.0177**	**1.0700e-003**	**0.0187**	**2.6700e-003**	**1.0700e-003**	**3.7400e-003**	**0.0000**	**2.1506**	**2.1506**	**1.7000e-004**	**0.0000**	**2.1548**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	3.8000e-004	0.0133	2.5800e-003	3.0000e-005	7.0000e-004	5.0000e-005	7.5000e-004	1.9000e-004	5.0000e-005	2.4000e-004	0.0000	3.1812	3.1812	2.3000e-004	0.0000	3.1871
Vendor	1.8000e-004	4.9600e-003	1.3000e-003	1.0000e-005	2.5000e-004	4.0000e-005	2.9000e-004	7.0000e-005	3.0000e-005	1.1000e-004	0.0000	0.9940	0.9940	7.0000e-005	0.0000	0.9958
Worker	4.2000e-004	3.5000e-004	3.7400e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.8000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.8428	0.8428	3.0000e-005	0.0000	0.8435
Total	**9.8000e-004**	**0.0186**	**7.6200e-003**	**5.0000e-005**	**1.8300e-003**	**1.0000e-004**	**1.9200e-003**	**4.9000e-004**	**9.0000e-005**	**5.9000e-004**	**0.0000**	**5.0180**	**5.0180**	**3.3000e-004**	**0.0000**	**5.0263**

3.9 Phase 2 Excavation, Pipe Laying, Backfill - 2018

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust					4.0000e-004	0.0000	4.0000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1610	1.2869	1.2164	1.9000e-003		0.0836	0.0836		0.0807	0.0807	0.0000	166.0399	166.0399	0.0317	0.0000	166.8315
Total	**0.1610**	**1.2869**	**1.2164**	**1.9000e-003**	**4.0000e-004**	**0.0836**	**0.0840**	**6.0000e-005**	**0.0807**	**0.0808**	**0.0000**	**166.0399**	**166.0399**	**0.0317**	**0.0000**	**166.8315**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.7000e-003	0.0955	0.0185	2.3000e-004	5.8400e-003	3.6000e-004	6.2000e-003	1.5800e-003	3.4000e-004	1.9200e-003	0.0000	22.7869	22.7869	1.6800e-003	0.0000	22.8288
Vendor	1.9900e-003	0.0565	0.0148	1.2000e-004	2.8700e-003	4.1000e-004	3.2700e-003	8.3000e-004	3.9000e-004	1.2200e-003	0.0000	11.3064	11.3064	8.1000e-004	0.0000	11.3267
Worker	4.8200e-003	3.9600e-003	0.0426	1.1000e-004	9.9800e-003	8.0000e-005	0.0101	2.6500e-003	8.0000e-005	2.7300e-003	0.0000	9.5868	9.5868	3.3000e-004	0.0000	9.5950
Total	**9.5100e-003**	**0.1559**	**0.0758**	**4.6000e-004**	**0.0187**	**8.5000e-004**	**0.0195**	**5.0600e-003**	**8.1000e-004**	**5.8700e-003**	**0.0000**	**43.6800**	**43.6800**	**2.8200e-003**	**0.0000**	**43.7505**

3.9 Phase 2 Excavation, Pipe Laying, Backfill - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.0000e-004	0.0000	4.0000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0297	0.2426	0.2517	4.0000e-004		0.0150	0.0150		0.0145	0.0145	0.0000	34.4104	34.4104	6.4000e-003	0.0000	34.5704
Total	**0.0297**	**0.2426**	**0.2517**	**4.0000e-004**	**4.0000e-004**	**0.0150**	**0.0154**	**6.0000e-005**	**0.0145**	**0.0145**	**0.0000**	**34.4104**	**34.4104**	**6.4000e-003**	**0.0000**	**34.5704**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.3000e-004	0.0189	3.7700e-003	5.0000e-005	4.8500e-003	7.0000e-005	4.9200e-003	1.2200e-003	7.0000e-005	1.2900e-003	0.0000	4.6999	4.6999	3.5000e-004	0.0000	4.7085
Vendor	3.8000e-004	0.0111	2.8400e-003	2.0000e-005	6.0000e-004	7.0000e-005	6.7000e-004	1.7000e-004	7.0000e-005	2.4000e-004	0.0000	2.3391	2.3391	1.6000e-004	0.0000	2.3432
Worker	9.1000e-004	7.3000e-004	7.9300e-003	2.0000e-005	2.0800e-003	2.0000e-005	2.1000e-003	5.5000e-004	2.0000e-005	5.7000e-004	0.0000	1.9385	1.9385	6.0000e-005	0.0000	1.9400
Total	**1.8200e-003**	**0.0307**	**0.0145**	**9.0000e-005**	**7.5300e-003**	**1.6000e-004**	**7.6900e-003**	**1.9400e-003**	**1.6000e-004**	**2.1000e-003**	**0.0000**	**8.9775**	**8.9775**	**5.7000e-004**	**0.0000**	**8.9917**

3.10 Phase 2 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.2300e-003	0.0432	0.0440	7.0000e-005		2.7100e-003	2.7100e-003		2.6000e-003	2.6000e-003	0.0000	6.0216	6.0216	1.2000e-003	0.0000	6.0515
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.2300e-003**	**0.0432**	**0.0440**	**7.0000e-005**		**2.7100e-003**	**2.7100e-003**		**2.6000e-003**	**2.6000e-003**	**0.0000**	**6.0216**	**6.0216**	**1.2000e-003**	**0.0000**	**6.0515**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-004	5.8500e-003	1.4900e-003	1.0000e-005	3.2000e-004	4.0000e-005	3.5000e-004	9.0000e-005	4.0000e-005	1.3000e-004	0.0000	1.2311	1.2311	9.0000e-005	0.0000	1.2333
Worker	4.8000e-004	3.8000e-004	4.1800e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0203	1.0203	3.0000e-005	0.0000	1.0211
Total	**6.8000e-004**	**6.2300e-003**	**5.6700e-003**	**2.0000e-005**	**1.4200e-003**	**5.0000e-005**	**1.4600e-003**	**3.8000e-004**	**5.0000e-005**	**4.3000e-004**	**0.0000**	**2.2514**	**2.2514**	**1.2000e-004**	**0.0000**	**2.2543**

3.11 Phase 2 Pump Station - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0115	0.1303	0.0833	1.6000e-004		5.7600e-003	5.7600e-003		5.3000e-003	5.3000e-003	0.0000	14.7282	14.7282	4.6600e-003	0.0000	14.8447
Total	**0.0115**	**0.1303**	**0.0833**	**1.6000e-004**		**5.7600e-003**	**5.7600e-003**		**5.3000e-003**	**5.3000e-003**	**0.0000**	**14.7282**	**14.7282**	**4.6600e-003**	**0.0000**	**14.8447**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.5000e-004	3.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0383	0.0383	0.0000	0.0000	0.0384
Vendor	6.0000e-004	0.0176	4.4800e-003	4.0000e-005	9.5000e-004	1.1000e-004	1.0600e-003	2.7000e-004	1.1000e-004	3.8000e-004	0.0000	3.6934	3.6934	2.6000e-004	0.0000	3.6998
Worker	1.4400e-003	1.1500e-003	0.0125	3.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	3.0608	3.0608	1.0000e-004	0.0000	3.0632
Total	**2.0400e-003**	**0.0189**	**0.0170**	**7.0000e-005**	**4.2500e-003**	**1.4000e-004**	**4.3900e-003**	**1.1400e-003**	**1.3000e-004**	**1.2800e-003**	**0.0000**	**6.7924**	**6.7924**	**3.6000e-004**	**0.0000**	**6.8014**

3.12 Phase 2 De-mobilization - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.9000e-004	2.4800e-003	2.0000e-003	0.0000		2.0000e-004	2.0000e-004		1.8000e-004	1.8000e-004	0.0000	0.2283	0.2283	7.0000e-005	0.0000	0.2301
Total	**2.9000e-004**	**2.4800e-003**	**2.0000e-003**	**0.0000**		**2.0000e-004**	**2.0000e-004**		**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.2283**	**0.2283**	**7.0000e-005**	**0.0000**	**0.2301**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	7.7000e-004	1.5000e-004	0.0000	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1916	0.1916	1.0000e-005	0.0000	0.1920
Vendor	4.0000e-005	1.1700e-003	3.0000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2462	0.2462	2.0000e-005	0.0000	0.2467
Worker	1.0000e-004	8.0000e-005	8.4000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2041	0.2041	1.0000e-005	0.0000	0.2042
Total	**1.6000e-004**	**2.0200e-003**	**1.2900e-003**	**0.0000**	**3.2000e-004**	**1.0000e-005**	**3.4000e-004**	**9.0000e-005**	**1.0000e-005**	**1.0000e-004**	**0.0000**	**0.6419**	**0.6419**	**4.0000e-005**	**0.0000**	**0.6428**

3.13 Phase 3 Mobilization - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	7.7000e-004	1.5000e-004	0.0000	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1916	0.1916	1.0000e-005	0.0000	0.1920
Vendor	4.0000e-005	1.1700e-003	3.0000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2462	0.2462	2.0000e-005	0.0000	0.2467
Worker	1.0000e-004	8.0000e-005	8.4000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2041	0.2041	1.0000e-005	0.0000	0.2042
Total	**1.6000e-004**	**2.0200e-003**	**1.2900e-003**	**0.0000**	**3.2000e-004**	**1.0000e-005**	**3.4000e-004**	**9.0000e-005**	**1.0000e-005**	**1.0000e-004**	**0.0000**	**0.6419**	**0.6419**	**4.0000e-005**	**0.0000**	**0.6428**

3.14 Phase 3 Pavement Cutting - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.7300e-003	0.0000	8.7300e-003	1.3200e-003	0.0000	1.3200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1500e-003	8.9700e-003	9.2600e-003	2.0000e-005		5.7000e-004	5.7000e-004		5.7000e-004	5.7000e-004	0.0000	1.3441	1.3441	9.0000e-005	0.0000	1.3465
Total	**1.1500e-003**	**8.9700e-003**	**9.2600e-003**	**2.0000e-005**	**8.7300e-003**	**5.7000e-004**	**9.3000e-003**	**1.3200e-003**	**5.7000e-004**	**1.8900e-003**	**0.0000**	**1.3441**	**1.3441**	**9.0000e-005**	**0.0000**	**1.3465**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.7000e-004	6.1500e-003	1.2300e-003	2.0000e-005	3.4000e-004	2.0000e-005	3.7000e-004	9.0000e-005	2.0000e-005	1.2000e-004	0.0000	1.5329	1.5329	1.1000e-004	0.0000	1.5358
Vendor	1.0000e-004	2.9300e-003	7.5000e-004	1.0000e-005	1.6000e-004	2.0000e-005	1.8000e-004	5.0000e-005	2.0000e-005	6.0000e-005	0.0000	0.6156	0.6156	4.0000e-005	0.0000	0.6166
Worker	2.4000e-004	1.9000e-004	2.0900e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5101	0.5101	2.0000e-005	0.0000	0.5105
Total	**5.1000e-004**	**9.2700e-003**	**4.0700e-003**	**4.0000e-005**	**1.0500e-003**	**4.0000e-005**	**1.1000e-003**	**2.9000e-004**	**4.0000e-005**	**3.3000e-004**	**0.0000**	**2.6586**	**2.6586**	**1.7000e-004**	**0.0000**	**2.6629**

3.15 Phase 3 Excavation, Pipe Laying, Backfill - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.6000e-004	0.0000	4.6000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0877	0.7152	0.7417	1.1700e-003		0.0441	0.0441		0.0426	0.0426	0.0000	101.4200	101.4200	0.0189	0.0000	101.8918
Total	**0.0877**	**0.7152**	**0.7417**	**1.1700e-003**	**4.6000e-004**	**0.0441**	**0.0446**	**7.0000e-005**	**0.0426**	**0.0427**	**0.0000**	**101.4200**	**101.4200**	**0.0189**	**0.0000**	**101.8918**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.5300e-003	0.1246	0.0249	3.2000e-004	6.9600e-003	4.5000e-004	7.4100e-003	1.9100e-003	4.3000e-004	2.3500e-003	0.0000	31.0421	31.0421	2.2800e-003	0.0000	31.0992
Vendor	1.1100e-003	0.0328	8.3600e-003	7.0000e-005	1.7600e-003	2.1000e-004	1.9800e-003	5.1000e-004	2.1000e-004	7.1000e-004	0.0000	6.8943	6.8943	4.8000e-004	0.0000	6.9064
Worker	2.7000e-003	2.1500e-003	0.0234	6.0000e-005	6.1400e-003	5.0000e-005	6.1900e-003	1.6300e-003	5.0000e-005	1.6800e-003	0.0000	5.7134	5.7134	1.8000e-004	0.0000	5.7179
Total	**7.3400e-003**	**0.1595**	**0.0567**	**4.5000e-004**	**0.0149**	**7.1000e-004**	**0.0156**	**4.0500e-003**	**6.9000e-004**	**4.7400e-003**	**0.0000**	**43.6498**	**43.6498**	**2.9400e-003**	**0.0000**	**43.7234**

3.16 Phase 3 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.6200e-003	0.0216	0.0220	3.0000e-005		1.3500e-003	1.3500e-003		1.3000e-003	1.3000e-003	0.0000	3.0108	3.0108	6.0000e-004	0.0000	3.0257
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.6200e-003**	**0.0216**	**0.0220**	**3.0000e-005**		**1.3500e-003**	**1.3500e-003**		**1.3000e-003**	**1.3000e-003**	**0.0000**	**3.0108**	**3.0108**	**6.0000e-004**	**0.0000**	**3.0257**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-004	2.9300e-003	7.5000e-004	1.0000e-005	1.6000e-004	2.0000e-005	1.8000e-004	5.0000e-005	2.0000e-005	6.0000e-005	0.0000	0.6156	0.6156	4.0000e-005	0.0000	0.6166
Worker	2.4000e-004	1.9000e-004	2.0900e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5101	0.5101	2.0000e-005	0.0000	0.5105
Total	**3.4000e-004**	**3.1200e-003**	**2.8400e-003**	**2.0000e-005**	**7.1000e-004**	**2.0000e-005**	**7.3000e-004**	**2.0000e-004**	**2.0000e-005**	**2.1000e-004**	**0.0000**	**1.1257**	**1.1257**	**6.0000e-005**	**0.0000**	**1.1272**

3.17 Phase 3 Pump Station - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0229	0.2607	0.1667	3.3000e-004		0.0115	0.0115		0.0106	0.0106	0.0000	29.4564	29.4564	9.3200e-003	0.0000	29.6894
Total	**0.0229**	**0.2607**	**0.1667**	**3.3000e-004**		**0.0115**	**0.0115**		**0.0106**	**0.0106**	**0.0000**	**29.4564**	**29.4564**	**9.3200e-003**	**0.0000**	**29.6894**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.5000e-004	3.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0383	0.0383	0.0000	0.0000	0.0384
Vendor	1.1900e-003	0.0351	8.9600e-003	8.0000e-005	1.8900e-003	2.3000e-004	2.1200e-003	5.5000e-004	2.2000e-004	7.7000e-004	0.0000	7.3867	7.3867	5.2000e-004	0.0000	7.3997
Worker	2.8900e-003	2.3000e-003	0.0251	7.0000e-005	6.5800e-003	5.0000e-005	6.6400e-003	1.7500e-003	5.0000e-005	1.8000e-003	0.0000	6.1215	6.1215	1.9000e-004	0.0000	6.1263
Total	**4.0800e-003**	**0.0376**	**0.0341**	**1.5000e-004**	**8.4800e-003**	**2.8000e-004**	**8.7700e-003**	**2.3000e-003**	**2.7000e-004**	**2.5700e-003**	**0.0000**	**13.5465**	**13.5465**	**7.1000e-004**	**0.0000**	**13.5644**

3.18 Phase 3 De-mobilization - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.9000e-004	2.4800e-003	2.0000e-003	0.0000		2.0000e-004	2.0000e-004		1.8000e-004	1.8000e-004	0.0000	0.2283	0.2283	7.0000e-005	0.0000	0.2301
Total	**2.9000e-004**	**2.4800e-003**	**2.0000e-003**	**0.0000**		**2.0000e-004**	**2.0000e-004**		**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.2283**	**0.2283**	**7.0000e-005**	**0.0000**	**0.2301**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	7.7000e-004	1.5000e-004	0.0000	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1916	0.1916	1.0000e-005	0.0000	0.1920
Vendor	4.0000e-005	1.1700e-003	3.0000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2462	0.2462	2.0000e-005	0.0000	0.2467
Worker	1.0000e-004	8.0000e-005	8.4000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2041	0.2041	1.0000e-005	0.0000	0.2042
Total	**1.6000e-004**	**2.0200e-003**	**1.2900e-003**	**0.0000**	**3.2000e-004**	**1.0000e-005**	**3.4000e-004**	**9.0000e-005**	**1.0000e-005**	**1.0000e-004**	**0.0000**	**0.6419**	**0.6419**	**4.0000e-005**	**0.0000**	**0.6428**

Appendix E
Hydraulic Modeling Report

EFFECTS OF LOS ANGELES – GLENDALE WATER RECLAMATION PLANT DISCHARGE REDUCTIONS ON THE LOS ANGELES RIVER

Hydraulic Modeling Report

Prepared for
City of Glendale

May 2018

EFFECTS OF LOS ANGELES – GLENDALE WATER RECLAMATION PLANT DISCHARGE REDUCTIONS ON THE LOS ANGELES RIVER

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TABLE OF CONTENTS

Page

Page

List Of Tables

List of Figures

SECTION 1
Introduction

1.1 Purpose of Study

The City of Glendale Department of Water and Power (Glendale) currently provides tertiary treatment of sanitary wastewater at the Los Angeles-Glendale Water Reclamation Plant (LAG WRP). Treated water is either recycled and reused by Glendale and its customers, or discharged into the LA River (LA River) near Colorado Street. The volume of treated wastewater discharged to the LA River by LAG WRP fluctuates seasonally between 12 and 7 million gallons per day (MGD) or 18 and 11 cubic feet per second (cfs), primarily because of changes in the volume of wastewater discharged by customers and in the rate of dry weather runoff.

As described in Glendale's Wastewater Change Petition WW0097, Glendale proposes to increase its use of recycled water, which will reduce annual average wastewater discharged to the LA River from 10,500 to 7,000 acre-feet (AF) (Project). This corresponds to a reduction from an annual average of 9 to 6 MGD or 14.4 cfs to 9.6 cfs. Assuming baseline flow conditions equal to the driest/lowest flow conditions in the LA River over the last 10 years (2008), the Project will reduce flows from 8.08 to 2.85 MGD in August, which is the month in which the lowest flows occur in the LA River every year – e.g., the worst case scenario or 12.5 to 4.4 cfs, an 8.1 cfs reduction. For context, average August flows in the LA River downstream of the LAGWRP, above the confluence with Arroyo Seco, were 92.9 cfs between 2005 and 2015.

The purpose of this report is to assess the effects of the Project on flows in the LA River with respect to in-channel biological habitat and recreational uses.

This report includes a detailed analysis of background flows in the LA River as they change downstream and analyzes the cumulative effects of the Project and other projects that involve proposed reductions in treated waste water discharge to the LA River, with related impacts. It builds on a study of the effects of reducing flows associated with the City of Burbank's Wastewater Change Petition WW0091 and Change Petition WW0019 (Burbank project) (ESA 2017a). The 2017 study evaluated the Project as a cumulative effect of the proposed Burbank project. This report concludes that the combined cumulative impact associated with the Project's incremental effect and the effects of other projects on LA River flows, including the Burbank project, is not significant.

1.2 Study Area

The study area for this report includes two segments of the LA River – Study Area Segment A and Study Area Segment B, as shown in Figure 1.

Study Area Segment A is a 5.4 mile section of the LA River channel that extends along the LA River from the point of discharge at the LAG WRP at Colorado Street downstream to the Arroyo Seco confluence near Highway 110 (Figure 1). Segment A is mostly composed of reaches that have concrete banks and an earthen “soft” bottom with in-channel vegetation, separated by short sections that are fully hardened (see Figure 2). Parts of these reaches support riparian and aquatic habitat, and recreation including kayaking and canoeing. Of the 5.4 miles of channel in the Study Area, approximately 4.8 miles is soft bottomed, with 0.6 miles of fully hardened channel around bridges and hydraulic structures.

Study Area Segment B is a 12-mile section of the LA River that extends from the Rio Hondo to the estuary (Figure 1). This section of the LA River is completely concrete lined channel with no soft bottom or habitat until the estuary at the mouth of the Pacific Ocean, at which point tidal flows (unaffected by the Project) control low flow conditions. A typical section is shown in Figure 3.

To orient readers with other studies of the LA River, Study Area Segment A is a subset of the “Alternatives with Restoration Benefits and Opportunities for Restoration (ARBOR) area” that was evaluated by the USACE LA River Ecosystem Restoration Feasibility Study (LAREF Study) (USACE 2013). Study Area Segment A covers reaches 4-6 of the ARBOR study area. ARBOR reaches 1-3 are upstream of the LAG WRP discharge point and thus unaffected by the Project. A typical view of the LA River in Segment A is shown in Figure 2. Study Area Segment B was not included in the USACE LAREF Study because that project ended where the LA River transitioned from having a soft bottom to being fully concrete lined.

The section of the LA River below Segment A and above Segment B was not considered in this report because that available hydraulic model has a simplified channel geometry that doesn’t include the low flow channel (i.e. the model was designed to evaluate flood flows rather than the low flows that this study is focused on). However, the results for Segment B (where the hydraulic model does include the low flow model) are transferable to the area between Segment A and Segment B since the trapezoidal channel geometry and flows are similar.

Figure 1. Study Area. The Study Area includes two segments – Segment A and Segment B.

Figure 2. View of the LA River downstream of the LAG WRP discharge point (Segment A)

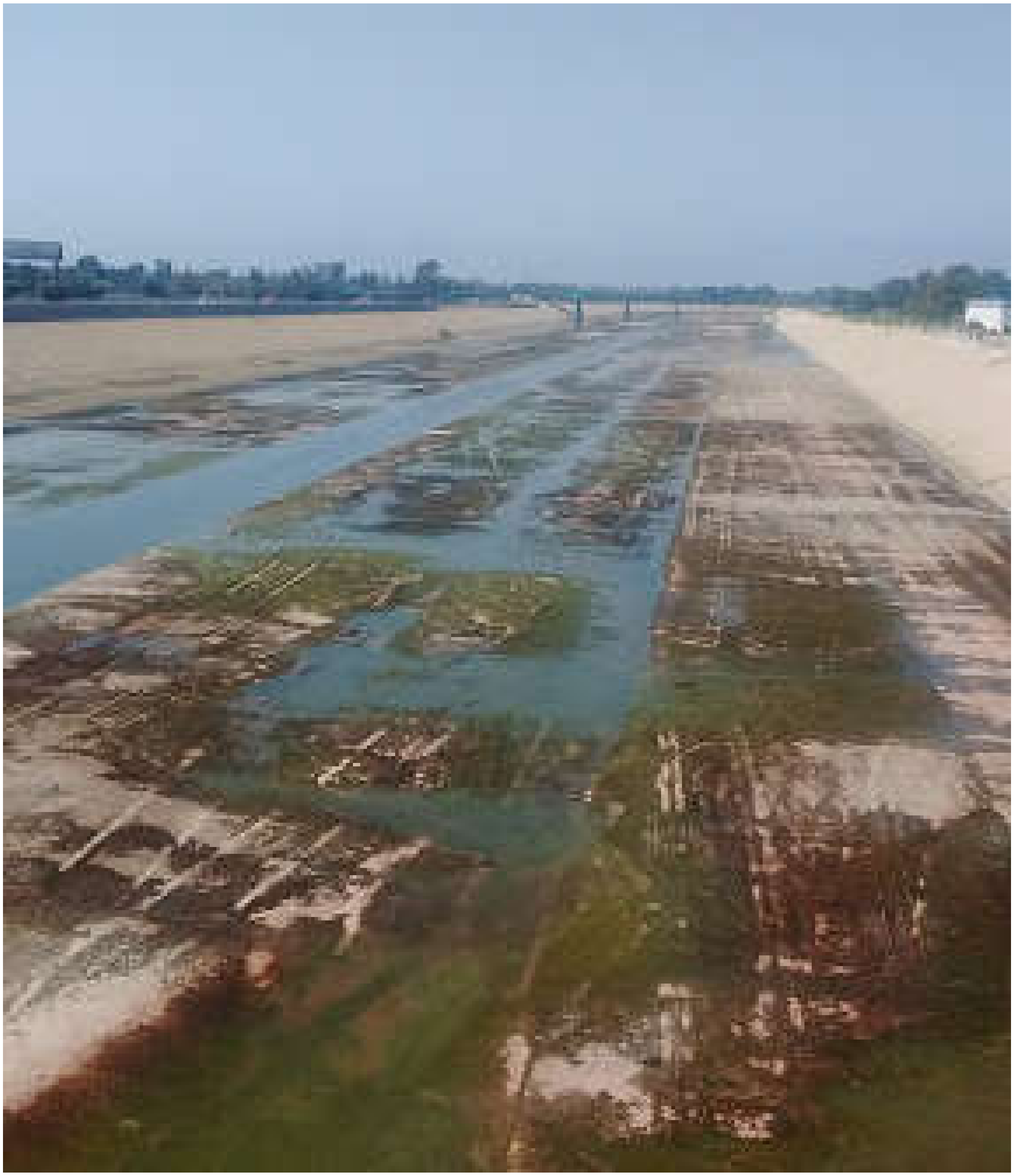


Figure 3. Algal mats fed by overflow from the low flow channel (Segment B)

1.3 Summary of Modeling Approach

1.3.1 Study Area Segment A

The analysis for Study Area Segment A used a one-dimensional hydraulic model of the LA River between the LAG WRP discharge point and the confluence with Arroyo Seco to assess the effects of reduced flow from LAG WRP on the: (1) velocity, (2) depth of flow and (3) wetted channel area within the LA River. These three parameters were chosen since they influence aquatic habitat (e.g. fish passage, spawning and rearing conditions, production of benthic macroinvertebrates), riparian habitat (e.g. depth from the root zone to the summer water level) and recreation (e.g. depth and area of water for kayaking). Hydraulic models calculate the estimated flow depth, velocity and wetted channel area in response to the channel dimensions and slope, applied discharge, boundary conditions, and channel roughness (a function of the channel materials and vegetation). By running a range of existing and proposed project discharges from LAG WRP and combining them with background flows in the LA River, the degree to which potential project flow changes are likely to affect water depths, velocities and wetted channel areas in the LA River can be estimated.

This study employed a HEC RAS hydraulic model developed by the Los Angeles District USACE that simulates the LA River between Barham Boulevard and First Street (Study Area A). The model was developed for a Flood Plain Management Services (FPMS) Special Study of the LA River, and is referred to as the 2016 LA River FPMS 1D/2D hydraulic model (USACE, 2016). This model is believed to be the most up to date and accurate model of the LA River, and specifically paid attention to representing the existing vegetated conditions in the soft-bottomed channel reaches, which are an important focus of the present study. The model represents the main channel in one dimension, and the floodplain in two dimensions. Because the focus of this study is low flows that remain in-channel, only the one dimensional part of the model was employed. The model was provided by the Los Angeles District USACE staff in electronic format on 12/30/2016.

Historic and proposed discharges from LAG WRP and the LA River were analyzed to develop the Project flows and background flows.

1.3.2 Study Area Segment B

For Segment B ESA obtained a separate USACE HEC RAS model for the Lower LA River, from the Rio Hondo confluence to the estuary. This segment does not contain soft bottomed channel, and the potential environmental issues were different than in Segment A, resulting in a slightly different modeling approach. In Segment B the concrete channel was modeled to assess whether flows were contained within the small low flow channel, or whether they overflowed out onto the wider bottom of the main channel. Overflows that inundate large areas of the wider bottom have been associated with algal mat growth (see Figure 3). Because the overflows that support algal mats can be influenced by diurnal fluctuations in flow that are a result of wastewater treatment plant operation, for Segment B flows were modeled to include these diurnal fluctuations.

SECTION 2
Methods

2.1 Characterize Project and Background Flows

2.1.1 Project Flows

Existing and proposed flows from LAG WRP were taken from the Glendale Wastewater Change Petition WW0097.

As shown in Table 1 and Figure 4, the Project will reduce flows in August from 8.08 to 2.85 MGD (12.5 to 4.4 cfs, or an 8.1 cfs reduction), on average. (Note that although the flow reduction is greater in July, background flows in the LA River are lower in August, resulting in greater potential project effects.)

TABLE 1
PROPOSED DISCHARGE REDUCTIONS PER THE GLENDALE WASTEWATER CHANGE PETITION (WW0097)

Summary of Changes to Monthly Average Rate and Annual Average Amount of Wastewater Discharged													
	---------------------------------- million gallons per day (mgd) ----------------------------------												acre-feet
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Present:	11.89	10.19	10.24	8.79	8.04	7.37	7.12	8.08	9.03	9.49	9.88	11.20	10,500
Proposed:	10.98	8.97	8.78	5.91	4.07	2.44	1.27	2.85	4.70	6.49	7.87	10.15	7,000
Change:	0.91	1.22	1.46	2.88	3.97	4.93	5.85	5.23	4.33	3.00	2.01	1.05	3,500

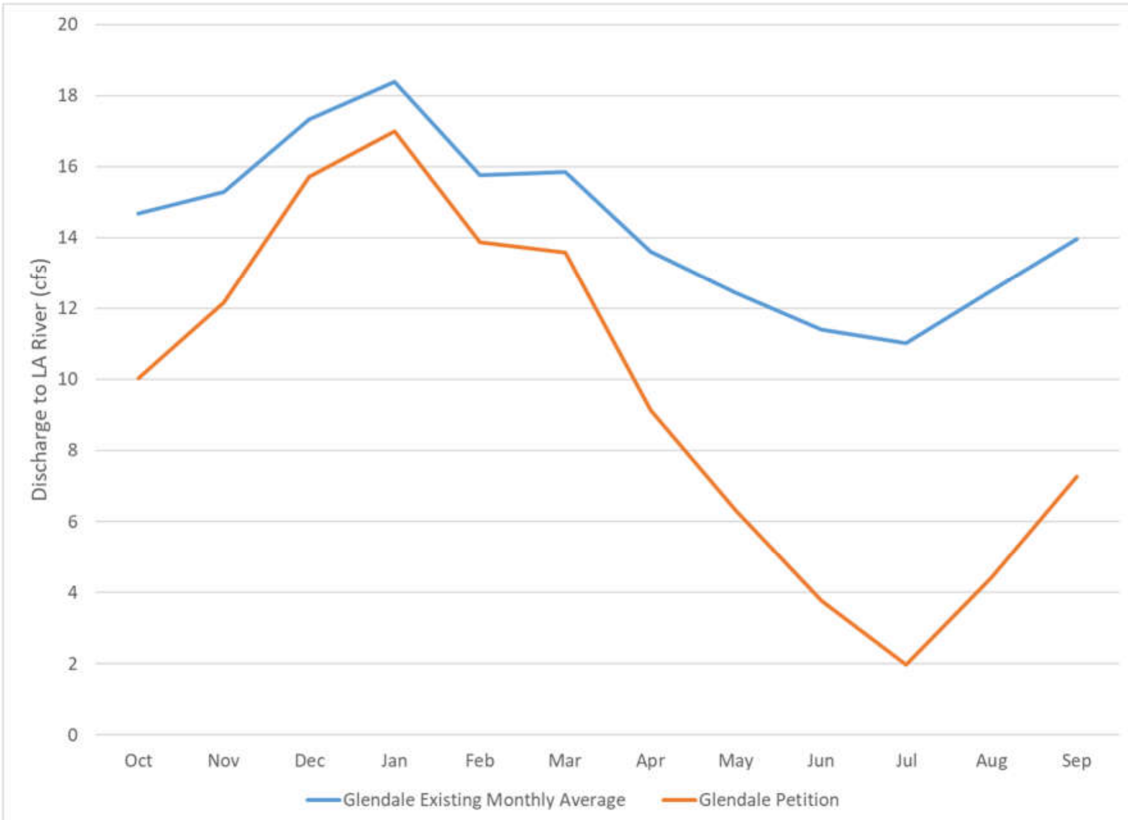


Figure 4. Existing and proposed discharge from LAG WRP to the LA River

2.1.2 Cumulative Flow Reductions in LA River

2.1.2.1 Assessment of Cumulative Impacts

The Project is one of several activities that may reduce flows to the LA River, justifying a cumulative analysis approach.

ESA conducted a review of publically-available reports and information on activities that have the potential to impact River flows. (See Exhibit A attached hereto). With the exception of the three pending wastewater change petitions (Burbank's two Petitions and the Sanitation Districts of Los Angeles County's Wastewater Change Petition (WW0098)) and an authorized diversion of 106 AFY of water from the River for irrigation purposes, none of the actions identified in Exhibit A are "past, present, [or] probable future projects producing related or cumulative impacts" within the meaning of CEQA Guidelines, section 15130(b)(1)(A), and therefore are not required to be included in the cumulative impacts analysis for the proposed Project. For those projects for which an Environmental Impact Report has been prepared, the environmental analysis did not include project level details or quantitative data that would allow meaningful analysis of the Project's potential to reduce flows in the Study Area of the LA River, or the action(s) is expected to have a positive impact on the LA River. (See Exhibit A.)

The three pending wastewater change petitions (see Water Code § 1211) include: (1) and (2): Burbank Wastewater Change Petition WW0091 and Change Petition WW0019 (described below); and (3) The Sanitation Districts of Los Angeles County's wastewater change petition (WW0098), which was noticed on June 19, 2017. This petition proposes a reduction at the Whittier Narrows Water Reclamation Plant of only 0.1 cfs in August, and because this wastewater enters the LA River in the concrete section at the Rio Hondo confluence downstream of Segment A of the Study area, it was not considered in the cumulative impacts analysis for the proposed Project. In addition, a reduction of 0.1 cfs will have no material impact on Segment B of the Study Area, which begins several miles below the Rio Hondo confluence.

On October 24, 2013 the State Water Resources Control Board authorized the diversion and use of water from the Los Angeles River by the City of Los Angeles. Under this permit, a maximum amount of 106 AFY can be diverted to irrigate 42.6 acres of land in the Los Angeles State Historic Park. Authorized use of water will be completed by December 31, 2029. This proposed 0.15 cfs diversion was not included in the Hydraulic Modeling Report because the water will be diverted downstream of the Arroyo Seco confluence, and therefore will not impact Segment A of the Study Area, which ends at Arroyo Seco. In addition, a reduction of 0.15 cfs will have no material impact on Segment B of the Study Area, which begins several miles below the Los Angeles State Historic Park.

As a result of this review, only the Burbank project proposed flow reduction was assessed, together with the proposed Project, in this cumulative flow analysis. Three sources of flow were considered in this assessment: flows from LAG WRP (including existing and proposed Project flows), flows from Burbank WRP (existing and proposed by the Burbank project) and flows in the LA River that are independent of the Project and Burbank project flows.

2.1.2.2 Burbank Project

Existing and proposed flows from Burbank project were taken from the Burbank Wastewater Change Petition WW0091 and Change Petition WW0019.

TABLE 2
PROPOSED DISCHARGE REDUCTIONS PER THE BURBANK PETITIONS
(WW0019 AND WW0091)

Summary of Changes to Monthly Average Rate and Annual Average Amount of Wastewater Discharged													
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Annual
	------------------------------- (million gallons per day) -------------------------------												(acre-feet)
Present:	4.66	4.45	4.68	5.19	5.17	5.58	6.35	5.32	5.51	3.87	2.91	3.77	5,376
Proposed:	1.69	1.79	2.63	3.68	3.94	3.96	4.62	4.42	4.36	3.82	2.23	3.22	3,766
Change:	2.97	2.66	2.05	1.51	1.23	1.62	1.73	0.90	1.15	0.05	0.68	0.55	1,610

As shown in Table 2, flows from Burbank in August (the month where flows in the LA River are lowest and therefore most sensitive to reductions) will be reduced from 4.45 to 1.79 MGD (6.9 cfs to 2.8 cfs, or a 4.1 cfs reduction), on average.

2.1.3 LA River Flows (Background Flows)

This report accounts for inflows to the LA River that occur downstream of Sepulveda Basin. Inflows to Study Area Segment A were characterized using eleven years of data from the Los Angeles County Department of Public Works Annual Hydrologic Reports, from Water Years 2005-06 to 2015-16. A Water Year extends from October 1st to September 30th, and Water Year 2015-16 is the most recent year for which data for all gages were available. These reports provide data from gages on the LA River at Tujunga Avenue and above the Arroyo Seco confluence, as well as inputs from Verdugo Wash and Burbank Western Channel. Analyzing a single year (e.g. WY 2007-08, as shown in Figure 5) shows that most flows occur between December and April, with low flows during the summer and early fall. During winter and spring, flows in the LA River are so high that reductions associated with the Project flow are negligible in comparison (0.1 – 4% of flow in the LA River for 2007-8, which was the year of lowest flow within the eleven-year record reviewed.) For the eleven years analyzed, August was the month with lowest flows, and is therefore the time when any Project effect is most likely to be detectable.

The data were further subdivided as follows (Figure 6):

- Dividing the contribution from LAG WRP into: (a) discharges that would not be affected by the Glendale Project (August flow minus Project August flow reduction (per Table 1)), and (b) discharges that would be eliminated by the Glendale Project (per Table 1).

- Dividing the contribution from Burbank WRP into: (a) discharges that would not be affected by the Burbank project (August flow in Burbank Western Channel minus Burbank project August flow reduction (per Table 2)), and (b) discharges that would be eliminated by the Burbank project (per Table 2).

- Calculating other flow sources that are not gaged directly (upwelling groundwater and dry weather runoff, shown as the purple band in Figure 6) by taking the flow in the LA River above the Arroyo Seco confluence and deducting flow in the LA River at Tujunga Avenue, plus flow at Burbank Western Channel, plus flow at Verdugo Wash, plus discharge from LAG WRP. This can be represented in the following equation:

Other flows = LA River @ Arroyo Seco – (LA River @ Tujunga Ave + Burbank Channel + Verdugo Wash + LAG WRP discharge)

August of Water Year 2007-08 was selected as the assumed baseline flow as it has the lowest total flow in the LA River within the eleven-year period for which data is available, and therefore is the most sensitive to flow reductions – e.g., the worst case analysis (August 2008 Condition). Thus, the analysis intentionally errs towards showing greater-than-average Project impacts. We evaluated hydrologic conditions in the LA River in the lowest flow month, of the lowest flow year, in an eleven-year period which was one of the driest decades on record.

During months or years with higher background flows in the LA River, the effects of the Project, together with the reduced flows attributable to the Project, would be proportionately less than reported here.

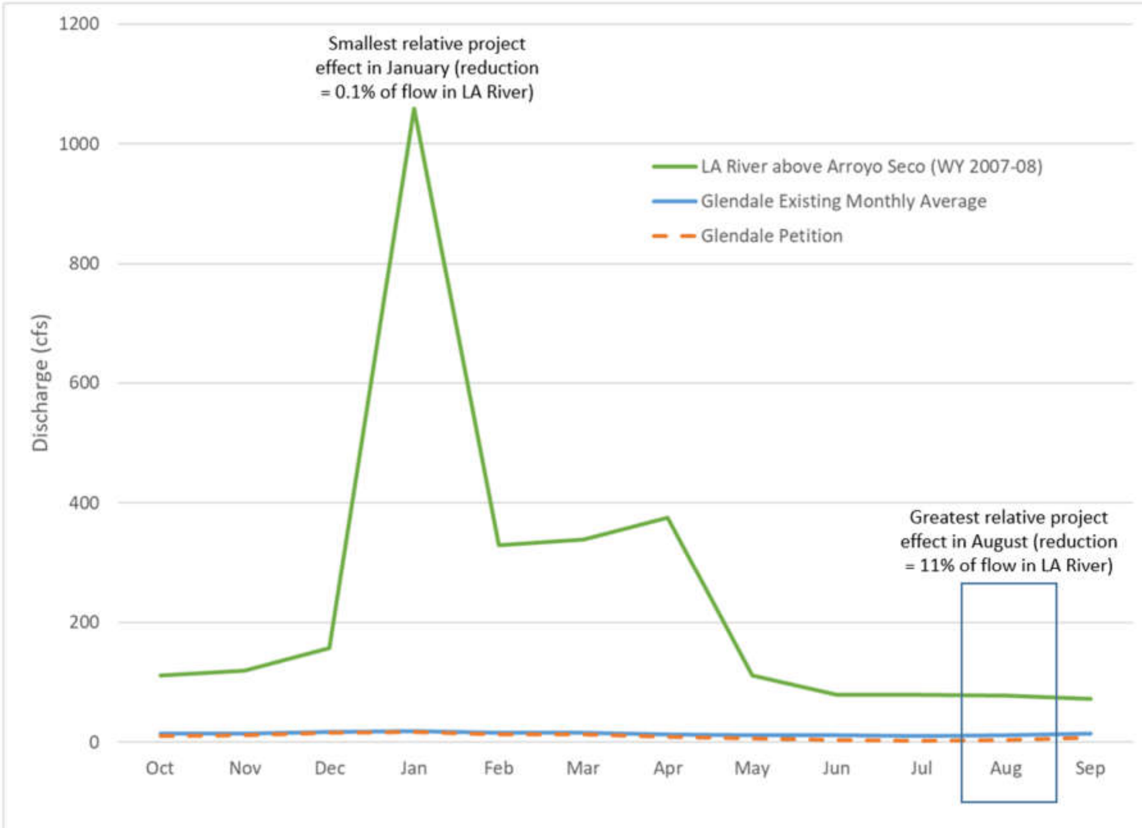


Figure 5. Average monthly flow in the LA River relative to existing and proposed LAG WRP discharges

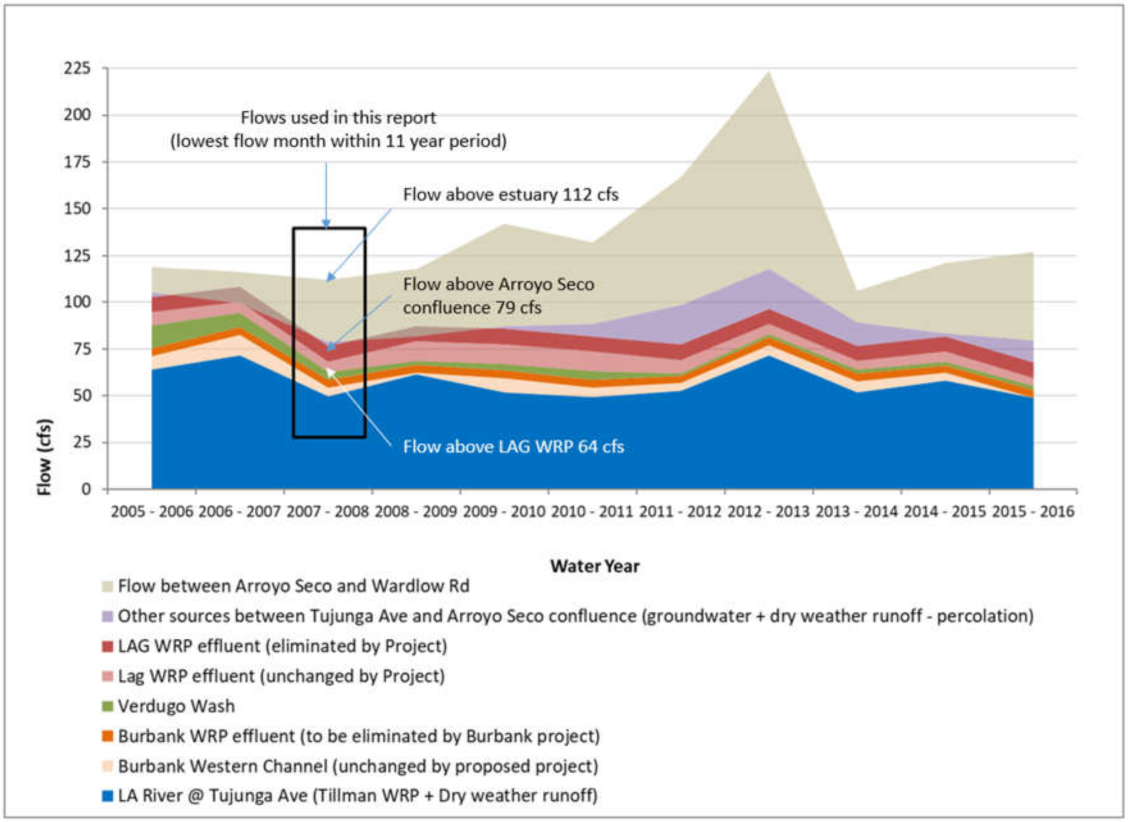


Figure 6. Sources of water in the LA River during August, Water Years 2005-2016

2.1.4 Flow Scenarios Assessed – Segment A and B

Three flow scenarios were evaluated:

1. Existing conditions (Worst Case Condition): August 2008 Condition with existing August discharge levels from LAG and Burbank WRPs as described in their respective wastewater and change petitions (Tables 1 and 2)
2. Project effects: August 2008 Condition with discharge from LAG WRP reduced from 12.5 to 4.4 cfs (Table 1) (Project)
3. Cumulative effects: August 2008 Condition with discharge from LAG WRP reduced from 12.5 to 4.4 cfs per Table 1 (Project) and Burbank WRP reduced from 6.9 to 2.8 cfs per Table 2 (Burbank project)

The flows in the August 2008 Condition are shown in Table 3 and schematically as they were applied to individual reaches of the hydraulic model in Figure 7. Note that although flows are calculated and shown between the LA River at Tujunga Avenue (upstream of the point where the Burbank WRP flows join the LA River) to the Arroyo Seco confluence, only the area from the LAG WRP to the Arroyo Seco confluence was modeled. Note that “other sources” refer to groundwater upwelling and dry weather flows that enter the river between Tujunga Avenue and Arroyo Seco without being measured directly. These were calculated by deducting the flow at the downstream limit of Study Area Segment A from flow at the upstream limit, minus all measured inflows in between. Since the precise location of these inflows is not known, the total flow from other sources (2.1 cfs in August 2008) was applied to each reach proportionately to its length, starting in Reach 2. This is consistent both with the gradual accumulation of dry season runoff from storm drains along the LA River and the observation that groundwater upwelling to the LA River is focused in the Glendale Narrows (ARBOR Reaches 2-6).

TABLE 3
FLOWS USED IN THE HYDRAULIC MODEL
(SEGMENT A SHOWN IN GREEN, SEGMENT B SHOWN IN GREY)

August flow WY2007-2008	Existing Conditions flow (cfs)	With Project flow (Existing minus 8.1 cfs Project) (cfs)	Cumulative Effects flow (Existing minus 8.1 cfs Project and 4.1 cfs Burbank project) (cfs)
LA River @ Tujunga Ave	49.7	49.7	49.7
LA River above Burbank Western Channel confluence (assumed same as LA River @ Tujunga Ave)	49.7	49.7	49.7
→ Burbank Western Channel inflow	*→8.8*	*→8.8*	*→4.7*
LA River Reach 2	58.7	58.7	54.6
LA River Reach 3 above Verdugo Wash confluence	58.8	58.8	54.7
LA River Reach 3 below Verdugo Wash confluence	63.2	63.2	59.1
LA River Reach 4 above LAG WRP discharge point	63.6	63.6	59.5
→ LAG WRP inflow	*→12.5*	*→4.4*	*→4.4*
LA River Reach 4 below LAG WRP discharge point	77.3	69.2	65.1
LA River Reach 5	77.6	69.5	65.4
LA River Reach 6	78.7	70.6	66.5
→ Other sources between Tujunga Ave & Arroyo Seco (added proportionately to each reach based on length)	*→2.1*	*→2.1*	*→2.1*
LA River @ Wardlow Road	112.0	103.9	99.8

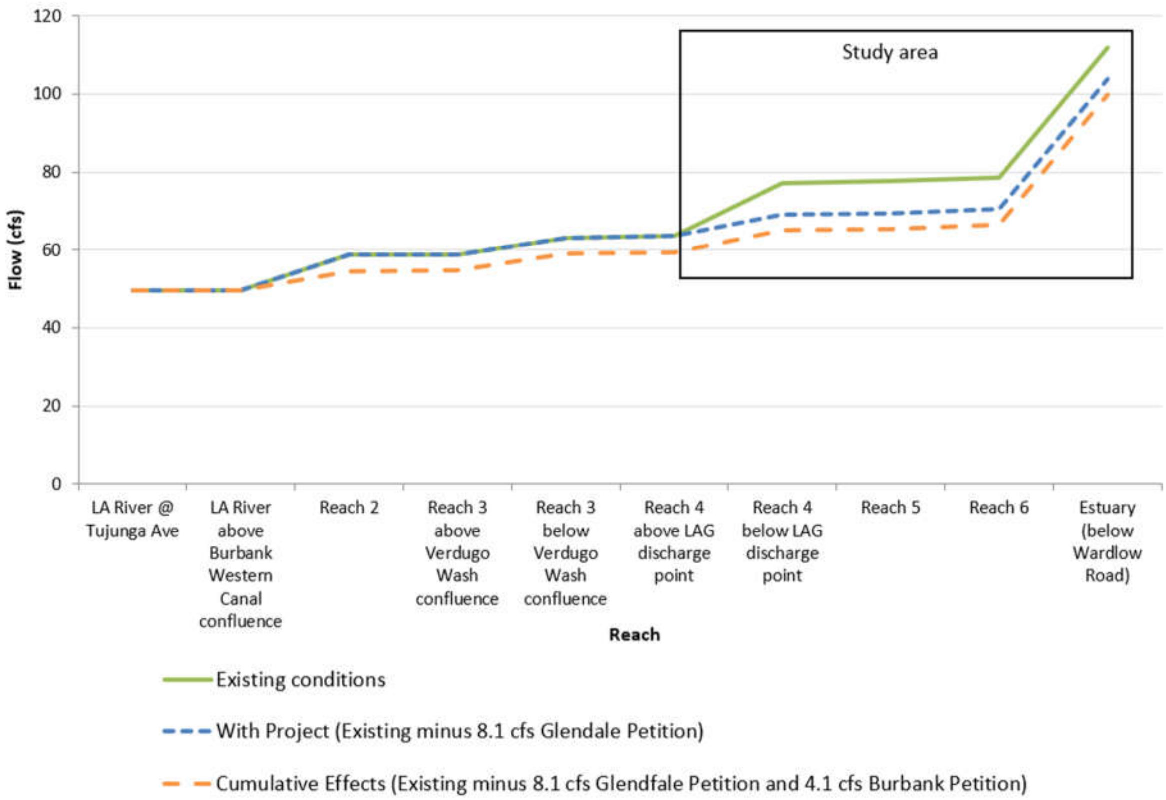


Figure 7. Schematic of flow for each reach in the Study Area under Existing, With-Project and Cumulative Effects scenarios

In Segment A, the flows from Table 3 were applied to the hydraulic model as a steady condition (i.e. using a single average flow value for each reach) to provide an average water depth, velocity and inundation for the flow assessed.

In Segment B, because the issue of potential concern is water spilling out of the low flow channel onto algal mats, the analysis used 15-minute interval flow data for the LA River at Sepulveda Basin for the entire month of August 2008 as the upstream flow boundary, and then added the measured flow accumulation between Sepulveda Basin and the flow gage on the Lower LA River at Wardlow Road (which accounts for the existing discharges from Glendale and Burbank). Using the 15-minute interval data rather than the monthly average data incorporated the effects of effluent cycling in the WRPs (in response to hourly fluctuations in the level of waste water received from treatment, as well as operation and maintenance of the treatment facility). These cycles are potentially a more accurate way to assess algal habitat since they capture daily wetting of the flood control channel floor at times of higher flow. Project conditions were represented by deducting the Glendale Waste Change petition value for August from the Existing condition, while Cumulative conditions were represented by deducting the Burbank Waste Change petition value for August from Project conditions. Flows were as shown in Table 4:

TABLE 4
FLOWS USED TO ASSESS ALGAL WETTING IN CONCRETE CHANNEL REACHES

Location	Existing conditions	Project Conditions	Cumulative Conditions
LA River @ Sepulveda Basin	60.2 - 92.6 cfs (varies with stormwater inputs)	Same as existing conditions	Same as existing conditions
Lower LA River concrete reaches (study reach)	LA River @ Sepulveda Basin + 36.1 cfs[1] (range = 96 – 129 cfs)	Existing condition minus 8.1 cfs[2] (range = 88 – 121)	Existing condition minus 8.1 cfs[2] minus 4.1 cfs[3] (range = 84 – 117 cfs)

1. 36.1 cfs is the average gain in flow between Sepulveda Basin and the LA River at Wardlow Road gage during August 2008.
2. 8.1 cfs = Average August reduction in flow at Glendale WRP per the Waste Change Petition
3. 4.1 cfs = Average August reduction in flow at Burbank WRP per the Waste Change Petition

The 15-minute interval time series of flow data from Sepulveda Basin for the month of August 2008 was used to generate a Project and Cumulative conditions time series (see Figure 8). All three time series were applied to the Lower LA River HEC RAS hydraulic model as the upstream boundary condition, with a normal depth boundary condition at the downstream end of the concrete channel.

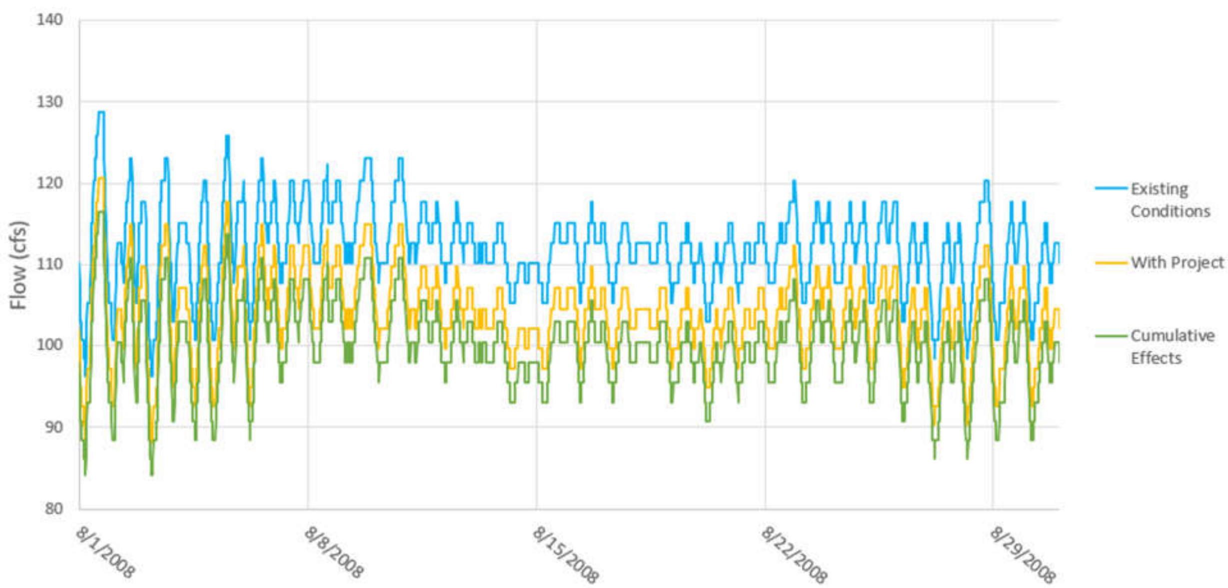


Figure 8. Flow series for the lower LA River during August 2008

2.2 Hydraulic Model Setup

2.2.1 `Model Approach

Because conditions and potential environmental concerns are different between Segment A and B, and they are covered in two different hydraulic models, different modeling approaches were taken. In Segment A which has reaches of natural soft bottomed bed, aquatic and riparian habitat, and recreational uses, analysis focused on how the reduced flows would affect the depth, velocity and area of wetted channel. In Segment B the channel is completely concrete, and the only vegetation is algal mats that form when the low flow channel overflows and covers the main concrete bottom of the flood control channel. The analysis in Segment B focused on the frequency with which flows in summer cover the entire concrete flood channel.

2.2.2 Model Topography – Segment A

The existing conditions geometry for the channel is based on as-built construction plans for concrete reaches and bridges, and a 2008 survey (understood to be the most recent survey) for soft-bottomed and vegetated reaches. A total of 251 channel cross sections cover the three ARBOR reaches that are included in Study Area Segment A.

2.2.3 Model Topography – Segment B

Study Area Segment B is composed 411 cross sections spanning concrete reaches and bridges. The channel geometry was developed based on as-built construction plans for concrete sections.

2.2.4 Model Roughness and Hydraulic Parameters – Segment A and B

Model results are sensitive to the applied hydraulic roughness, which encompasses the friction effect of the banks, bed sediment and topography, and the effects of vegetation growing in the bed. For consistency with the USACE 2016 report, ESA used the same existing conditions roughness coefficients in the model setup as received from the LA District USACE:

- 0.014 concrete channel reaches
- 0.035 clean, straight soft-bottomed reaches
- 0.06 soft-bottomed reaches with light brush and trees
- 0.11 soft-bottomed reaches with heavy stands of trees

In Segment A roughness was varied by the USACE across and between individual cross sections based on visual observation of channel and vegetation conditions (USACE, 2016). In Segment B all reaches are completely concrete, so a value of 0.014 was used. ESA also used the same hydraulic parameters for bridge approaches and ineffective flow areas as provided in the existing conditions HEC RAS model.

2.2.5 Model Output – Segment A

For each of the 251 cross sections within the Segment A the maximum flow depth (flow elevation minus channel invert elevation) and the channel velocity were exported under each flow scenario. Cross section results were averaged to the reach scale. The water surface (representing the wetted channel area) for each flow scenario was plotted in RASmapper and exported to GIS, where the reach breaks were used to measure the area of water surface and wetted channel within each reach. To identify how much of the difference in wetted channel area occurred on natural bed versus concrete bed or channel walls, the difference in wetted area was measured at each cross section in HEC RAS and assigned to either natural materials or concrete. The area of channel between each cross section was calculated, and the resulting proportion of natural versus concrete channel assigned to the overall change in wetted area from GIS.

2.2.6 Model Output – Segment B

Because Segment B is a concrete reach with no riparian habitat or recreational uses, a different approach was used compared with Segment A. In Segment B five cross sections were selected that have visible algal mats in Google Earth, and that are distributed along the Segment. At each cross section the range of water surface elevations associated with diurnal fluctuations in flow were analyzed under existing, project and cumulative conditions, and used to calculate whether the low flow channel would have contained the flow or caused it to inundate the algal mats.

SECTION 3
Results

3.1 Study Area Segment A

3.1.1 Organization of Results

For consistency with the USACE LAREF Study, the model was divided into the three reaches of the ARBOR project area that are downstream of the LAG WRP discharge point. These reaches are labelled 4-6 from upstream to downstream, as shown in Figure 9. For each reach the average water depth in the center of the channel, average velocity and total channel wetted area were calculated for each flow scenario. A representative cross section was selected to illustrate the results graphically.

3.1.2 Changes to Flow in the LA River

The change in flow at each reach within the Study Area (Segments A and B) is shown as a percentage of existing conditions in Table 5.

TABLE 5
CHANGE IN FLOW ALONG LA RIVER AND AT KEY INPUTS UNDER WITH-PROJECT AND CUMULATIVE EFFECTS (CHANGES IN BLUE ARE CHANGES IN INFLOWS, CHANGES IN BLACK ARE CHANGES IN THE LA RIVER)

August flow WY2007-2008	With-Project % change in flows	Cumulative % change in flows (Project + Burbank project)
LA River @ Tujunga Ave	0%	0%
→ Burbank Western Channel inflow (cumulative effect)	*0%*	*-47%*
LA River Reach 4 above LAG WRP discharge point	0%	-6%
→ LAG WRP discharge inflow	*0%*	*-65%*
LA River Reach 4 below LAG WRP discharge point	-10%	-16%
LA River Reach 5	-10%	-16%
LA River Reach 6	-10%	-16%
Other sources Tujunga Ave to Arroyo Seco	0%	0%
LA River @ Wardlow Road	-4%	-11%

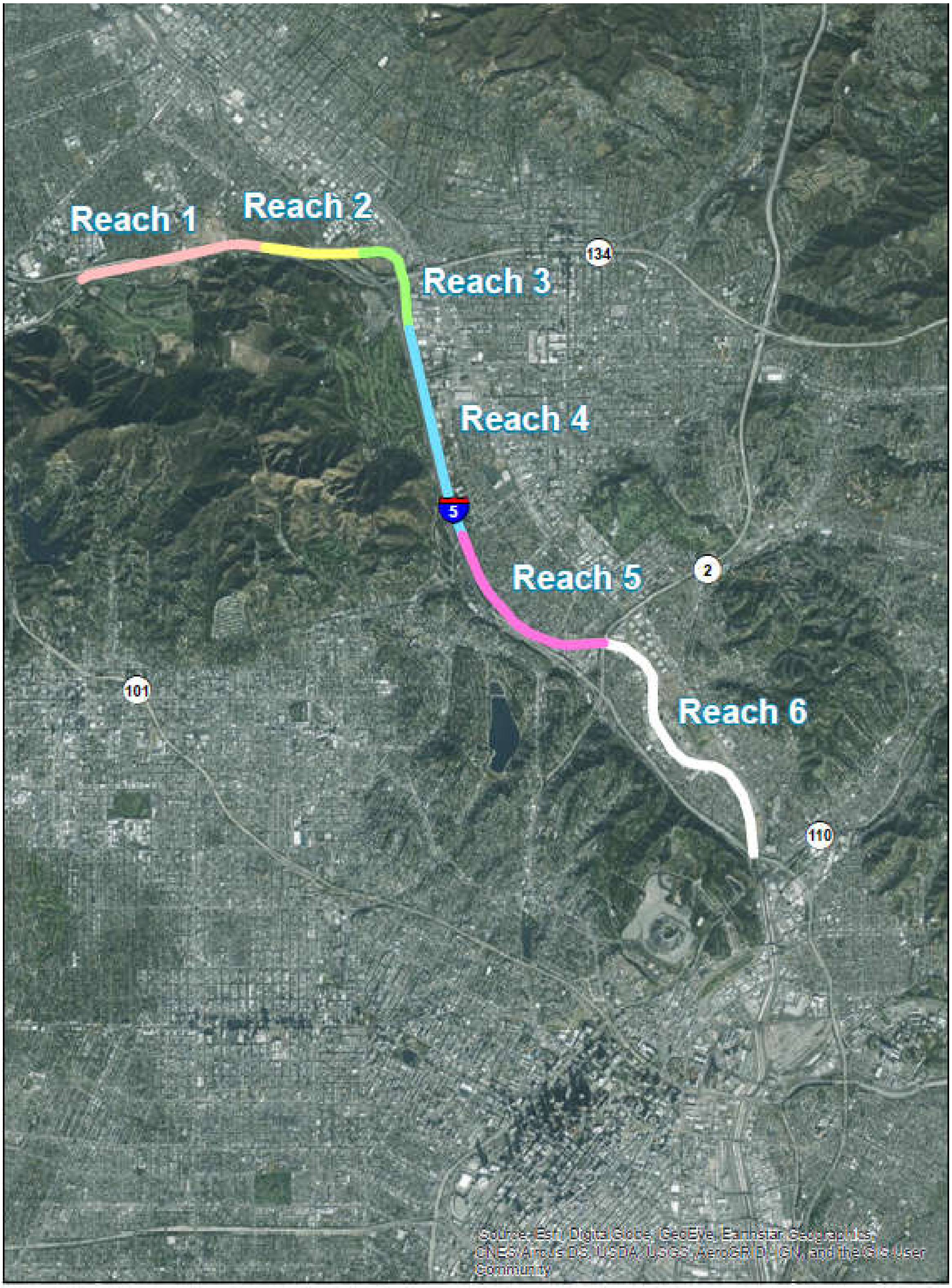


Figure 9. ARBOR reach locations referred to in report (Segment A)

As shown in Tables 3 and 5, the proposed flow reduction from the Project is a very small proportion of the total August flow in the LA River in Segment A. Although the Project flow reduction of 8.1 cfs represents a 65% reduction in discharges from the LAG WRP during the August 2008 Condition, it constitutes only a 10% reduction in flows in the LA River. During higher flow months of the year than August these values would be much smaller, and during years when flows were higher than 2007-08, these percentages would be slightly smaller. For example, using the average August flow for the eleven-year period analyzed above, the Project would reduce flows at the Arroyo Seco confluence (downstream of the LAF WRP) by 9%. Using the August with the highest flows during the eleven-year period, the corresponding reduction would be 7% at the Arroyo Seco confluence.

The cumulative effect of both the Project and the Burbank project is a reduction in flows within the LA River of 16% between the LAG WRP discharge point and the confluence with Arroyo Seco. Using the average August flows rather than August 2008 Condition, the cumulative effect is a 13% reduction above the Arroyo Seco confluence, while using the highest August flows the cumulative reduction is 10% above Arroyo Seco.

3.1.3 Relative Contributions of the Project and Burbank Project to Changes in Flow

A potential basis for determining the relative contributions of the proposed Project and the flow reductions proposed by the Burbank Petition to hydrologic changes in the LA River between Burbank Western Channel and Arroyo Seco is as follows:

- Between the LAG WRP discharge point and the confluence with Arroyo Seco (21,174 linear feet of channel), approximately two thirds of the changes are due to the proposed Project flow reductions and one third is due to the flow reductions proposed by the Burbank Petition (based on the fact that the proposed Project reduction is 4.1 cfs and the Glendale Petition reduction is 8.1 cfs).

3.1.4 Changes to Velocity, Depth and Wetted Channel Area

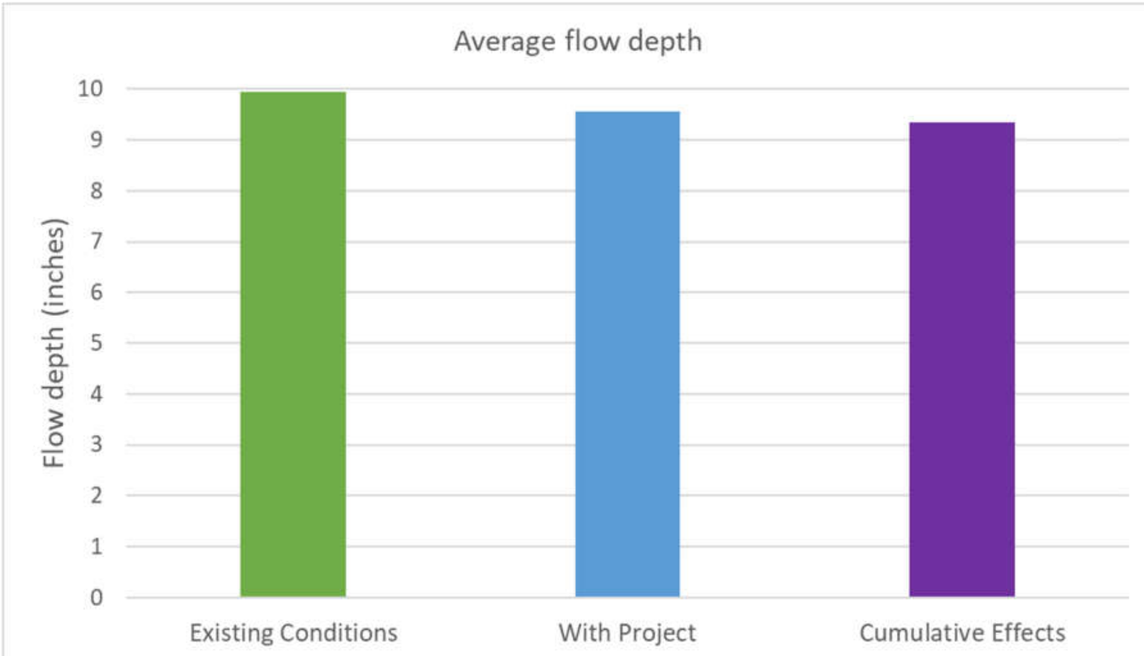
The hydraulic model results for the Project show that under the August 2008 Conditions: (1) the average velocity within Study Area Segment A would be slightly reduced, from 1.48 to 1.43 feet/sec (-2% change), and (2) the average depth in the deepest part of the channel would be slightly reduced from 9.9 to 9.6 inches (0.4 inches, or -0.3%), as shown in Figure 10 and Table 5.

Under August 2008 Conditions, the hydraulic model results for the Project and Burbank project (cumulative effects) are: (1) the average velocity within Study Area Segment A would be reduced from 1.48 feet/sec to 1.38 feet/sec (-6.8%), and (2) the average depth would be reduced from 9.9 to 9.3 inches (0.6 inches, or 0.5%).

The Project would slightly reduce the total wetted area of channel from 81.0 to 79.5 acres (-1.5 acres, 1.9% of existing condition) during the August 2008 Condition, as shown in Figure 9 and Table 6. This represents an average 14-inch-wide strip along both edges of the channel throughout the study reach. 26% of the reduction in wetted area occurs on concrete banks or bed and 74% on soft channel materials, so the reduction in wetted soft channel is 1.1 acres.

Under cumulative effects, an additional 1.0 acres of channel would not be wetted during the August 2008 Condition, for a cumulative loss of 2.5 acres, or 3.2% of the total wetted channel area, as shown in Figure 11 and Table 7. This could be represented by a strip 23 inches wide on both sides of the channel through the study reach. With a 26:74 ratio of concrete to earth, there will be a temporary (during the lowest flow months of the year) dewetting of 1.8 acres of soft bottomed channel compared with the existing conditions.

The modeled Project effects and cumulative project effects are very minor, and fall well within the range of data collection and hydraulic model uncertainty and error. The Project hydrologic effects would likely be almost undetectable in the field, and the cumulative effects barely detectable.



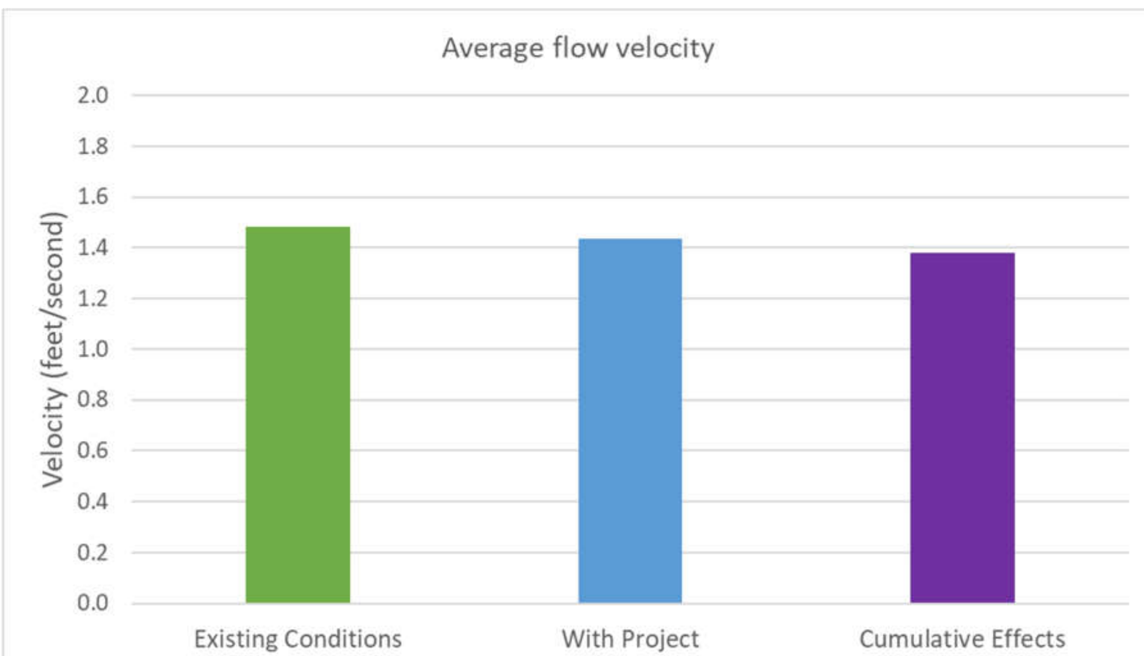


Figure 10. Average flow depth and velocity under Project and Cumulative effects (Segment A)

TABLE 6
SUMMARY OF VELOCITY AND DEPTH CHANGES UNDER DIFFERENT FLOWS FROM PROJECT AND CUMULATIVE EFFECTS (SEGMENT A)

	Scenario	Reach flow (cfs)	Flow from LAG WRP (cfs)	Flow from Burbank WRP (cfs)	Flow depth (inches)	Change in flow depth (inches)	Flow velocity (ft/sec)	Change in flow velocity (ft/sec)
Reach 4 Downstream of LAG WRP	Existing Conditions	76.4	12.5	8.8	7.77	0.00	1.55	0.00
	With Project (Existing minus 8.1 cfs LAG reduction)	69.2	4.4	8.8	7.47	-0.30	1.50	-0.05
	Cumulative effects (Existing minus 8.1 cfs LAG and 4.1 cfs Burbank)	65.1	4.4	4.7	7.26	-0.50	1.43	-0.12
Reach 5	Existing Conditions	76.9	12.5	8.8	7.47	0.00	1.59	0.00
	With Project	72.8	4.4	8.8	7.18	-0.29	1.54	-0.05
	Cumulative effects	64.7	4.4	4.7	7.00	-0.47	1.47	-0.11
Reach 6	Existing Conditions	78.5	12.5	8.8	14.93	0.00	1.29	0.00
	With Project	74.4	4.4	8.8	14.38	-0.55	1.24	-0.05
	Cumulative effects	66.3	4.4	4.7	14.07	-0.86	1.21	-0.07
Average (All Reaches)	Existing Conditions	76.5 - 78.5	12.5	8.8	9.94	0.00	1.48	0.00
	With Project	69.2 - 70.6	4.4	8.8	9.57	-0.38	1.43	-0.05
	Cumulative Effects	64.3 - 6.4	4.4	4.7	9.34	-0.60	1.38	-0.10

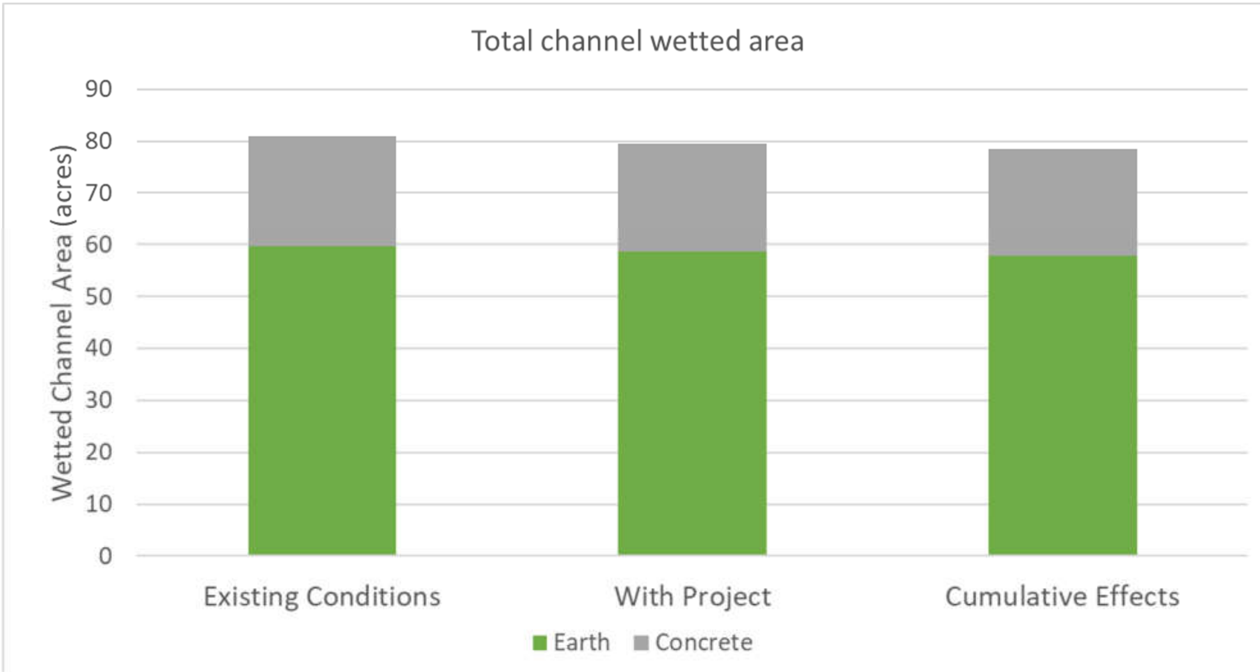


Figure 11. Total wetted channel and bank area under Project and Cumulative Effects (Segment A)

TABLE 7
SUMMARY OF WETTED CHANNEL AREA DRY WEATHER CHANGES UNDER PROJECT AND CUMULATIVE EFFECTS (SEGMENT A). NOTE WETTED AREA INCLUDES BOTH CONCRETE AND EARTH CHANNEL AND BANKS

	Scenario	Reach flow (cfs)	Flow from LAG WRP (cfs)	Flow from Burbank WRP (cfs)	Wetted channel area (acres)	Change in wetted area (acres)	% change
Reach 4 (downstream of LAG discharge point)	Existing Conditions	76.5	12.5	8.8	18.8	0	0.0%
	With Project	69.2	12.5	4.7	18.6	-0.2	-1.1%
	Cumulative Effects	64.3	4.4	4.7	18.4	-0.4	-2.2%
Reach 5	Existing Conditions	76.9	12.5	8.8	31.1	0	0.0%
	With Project	69.5	12.5	4.7	30.6	-0.5	-1.6%
	Cumulative Effects	64.8	4.4	4.7	30.2	-0.9	-3.0%
Reach 6	Existing Conditions	78.5	12.5	8.8	31.1	0.0	0.0%
	With Project	70.6	12.5	4.7	30.3	-0.8	-2.6%
	Cumulative Effects	66.4	4.4	4.7	29.9	-1.2	-4.0%
Total	Existing Conditions	76.5 - 78.5	12.5	8.8	81.0	0.0	0.0%
	With Project	69.2 - 70.6	12.5	4.7	79.5	-1.5	-1.9%
	Cumulative Effects	64.3 - 6.4	4.4	4.7	78.5	-2.5	-3.2%

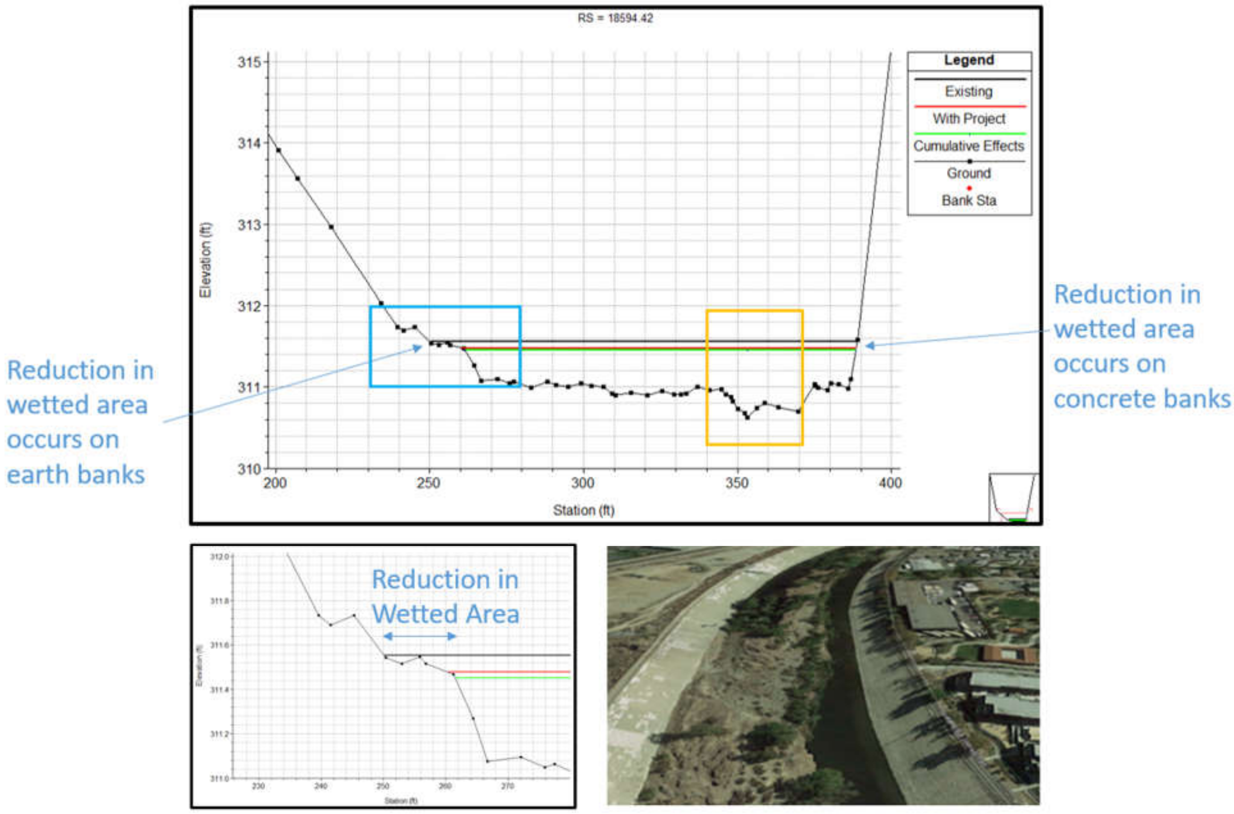


Figure 12. Modeled water surface elevations for ARBOR reach 6 under existing, with-project and cumulative effects conditions, for August 2008 Condition

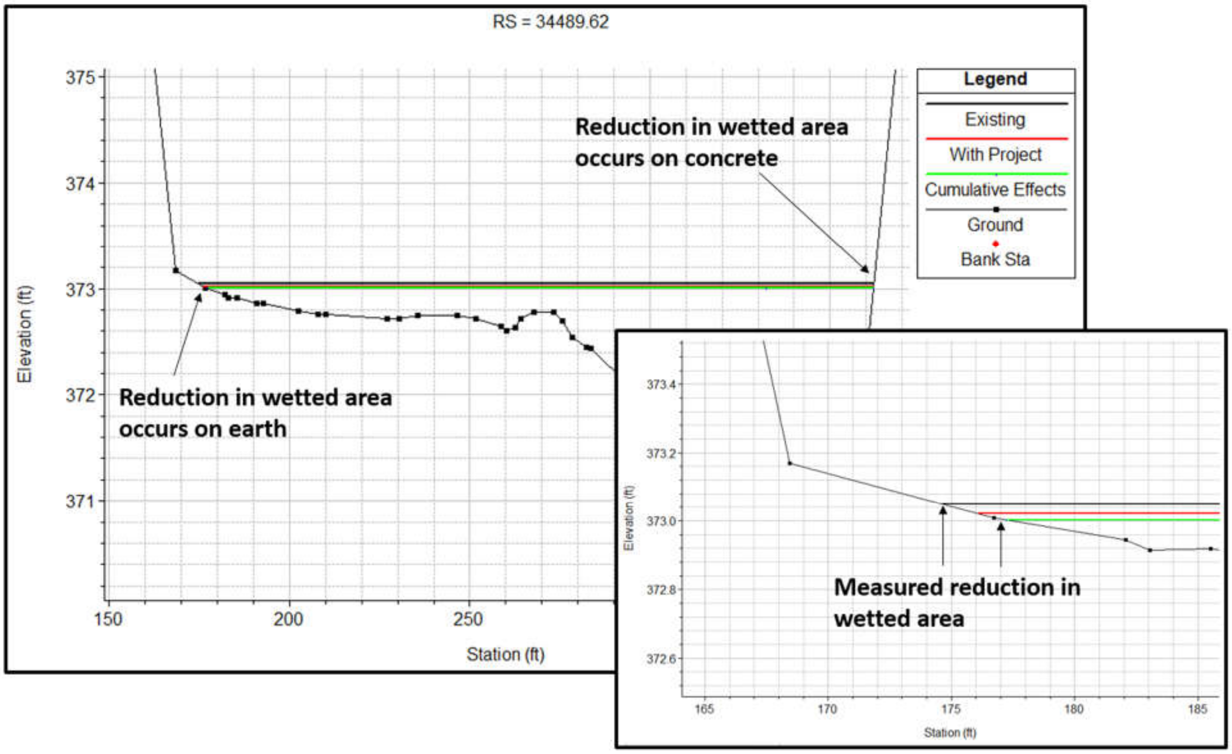


Figure 13. Example cross section used to estimate change in wetted area

3.1.5 Potential Impacts to Recreation

A 2.5-mile reach within Study Area Segment A, the Elysian Valley River Recreation Area, is permitted for kayaking and canoeing. This reach extends from Fletcher Drive (near the 2 Freeway) downstream to Steelhead Park (near the Arroyo Seco confluence) and closely corresponds to the ARBOR reach 6. Kayaking could potentially be impacted if river depths were to fall below values needed for typical watercraft to float clear of the channel bed. Published minimum draft criteria for kayaks and canoes could not be found in the literature, but based on a review of manufacturers specifications some parameters were developed. Kayaks and canoes typically have a total depth of around 14-16 inches, with a draft of 7-8 inches. As a rough guide, any flow deeper than 1 foot is likely to be suitable for the type of craft used on the LA River. Note that the cross sections for the hydraulic model are spaced approximately 100-200 feet apart, so there may be short sections of channel that are shallower than the values reported here.

3.1.5.1 Effects of Project Reductions

In ARBOR reach 6, average flow depth in the center of the channel is 14.9 inches under the August 2008 Condition, and is predicted to fall to 14.4 inches under the with-Project condition, a decline of 0.6 inches or -0.3% (values rounded to nearest tenth of inch). The reduction in wetted channel area within reach 6 is 0.8 acres (2.6% of the existing wetted area) of which 27% is concrete channel. Because the Project would not reduce flows below 1.0 feet, even under the worst-case condition, the Project is not likely to have a noticeable effect on recreation within Reach 6, or elsewhere.

3.1.5.2 Cumulative Effects of Project Plus Burbank Project Reductions

Under the cumulative effects scenario average flow depth in the center of the channel is predicted to fall from 14.9 inches to 14.1 inches a decline of 0.9 inches or -0.5%. The reduction in wetted channel area within reach 6 is 1.2 acres (4.0% of the existing wetted area) of which 27% is concrete channel. Given that the reduction in flow resulting from the Project and Burbank project, under the worst-case condition, will not reduce flows below 1.0 feet, the cumulative effects on recreation are not likely to be significant, and are likely to be barely noticeable within Reach 6, or elsewhere.

SECTION 4
Study Area Segment B

Five cross sections that currently show evidence of algal mats were selected from the HEC RAS model between Highway 91 and the end of the concrete channel at Willow Street. The locations are shown in Figure 14. Note that upstream of Highway 91 the HEC RAS model simplifies the channel geometry by not representing the low flow channel: as a result, cross sections upstream of this location were not analyzed, but because the channel geometry is very uniform upstream and downstream of Highway 91 the results are likely to be very similar. For each of the cross sections, the range of water depths resulting from the varying flows over August were calculated and used to develop a depth exceedance curve (a plot of percent time within August 2008 that a given water depth was exceeded in a cross section of the LA River). An example cross section and HEC RAS output is shown in Figure 15.

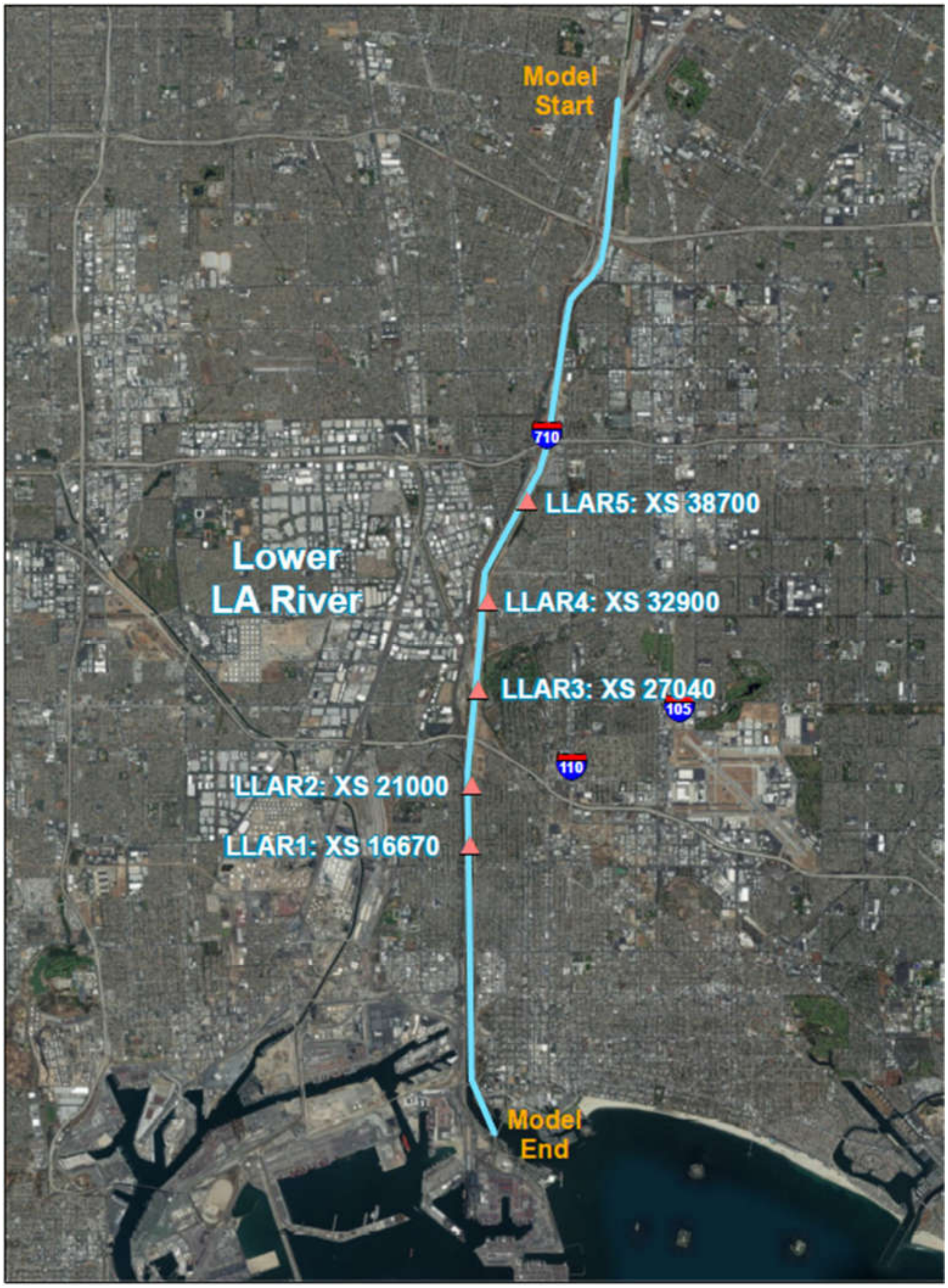


Figure 14. Location of Lower LA River HEC RAS model domain and cross sections analyzed for channel wetness in Segment B

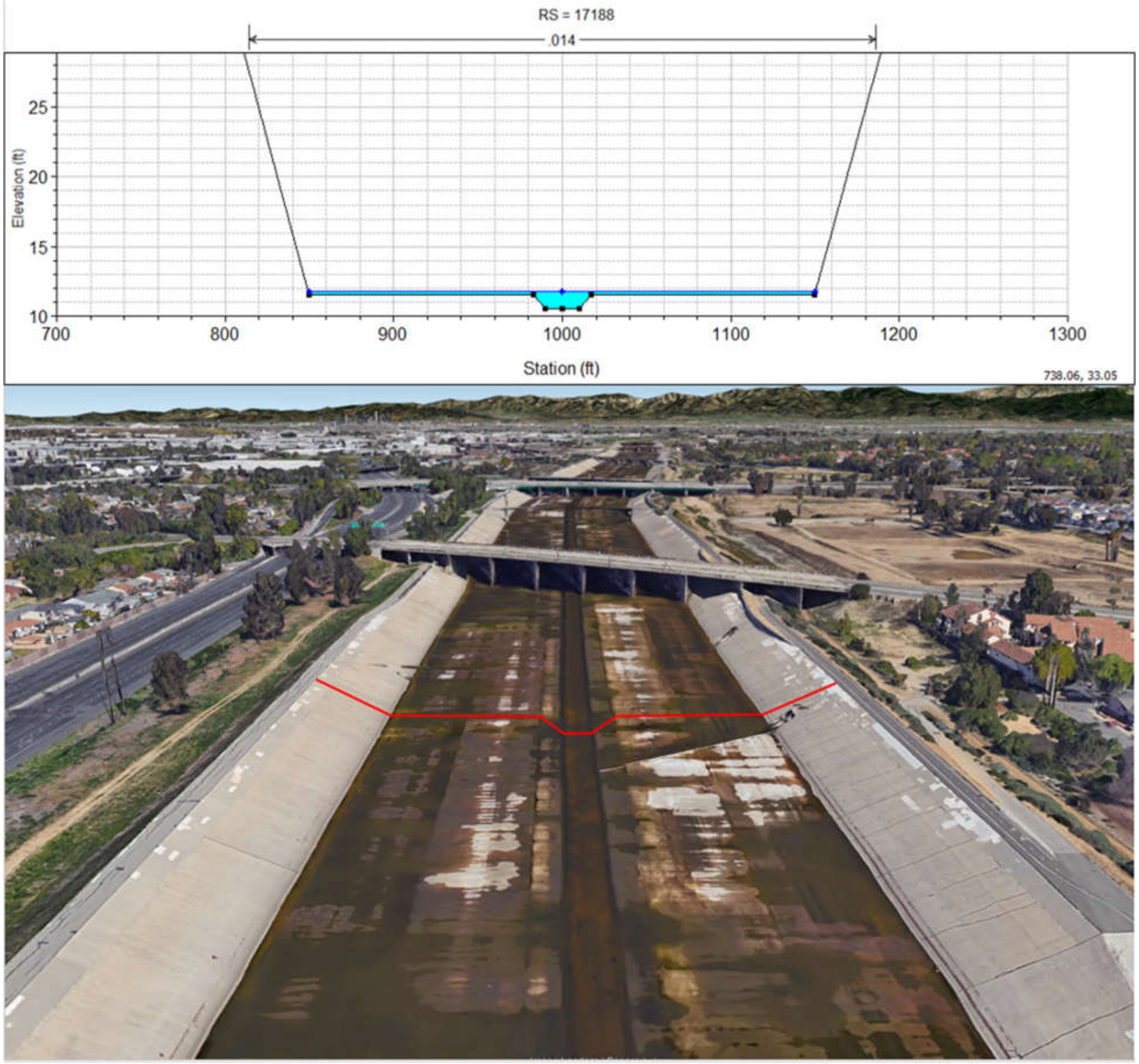


Figure 15. Example of Lower LA River cross sections showing location (lower image) and HEC RAS cross section and water level output (upper image)

The resulting plots (Figures 16-20) show with depth exceedance curves for the five cross sections. The red dashed lines indicate the water depth at which flow would spill out of the low flow channel onto the channel floor. In all five cross sections, and under all three flow scenarios, flows were too large to be contained within the low flow channel, and consequently spilled over the floor of the flood control channel at all times (i.e. the project or cumulative effect never caused the concrete floor to dry out). The change in water depth across the channel was around 0.25 inches between existing and project flows, and 0.35 inches between existing and cumulative flows.

To further check for potential impacts, ESA identified the range of flows that would cause the low flow channel to overflow in all the cross sections of the model that had a low flow channel, not just the five cross sections analyzed in detail above. This ranged from 55 – 80 cfs: i.e. provided flows do not fall below 80 cfs there should be no change in wetting of the algal mats. As shown in Table 7, flows never fall below 80 cfs in the Project or Cumulative conditions scenario, hence all flows should continue to spill out of the low flow channel and wet the areas where algae currently grow.

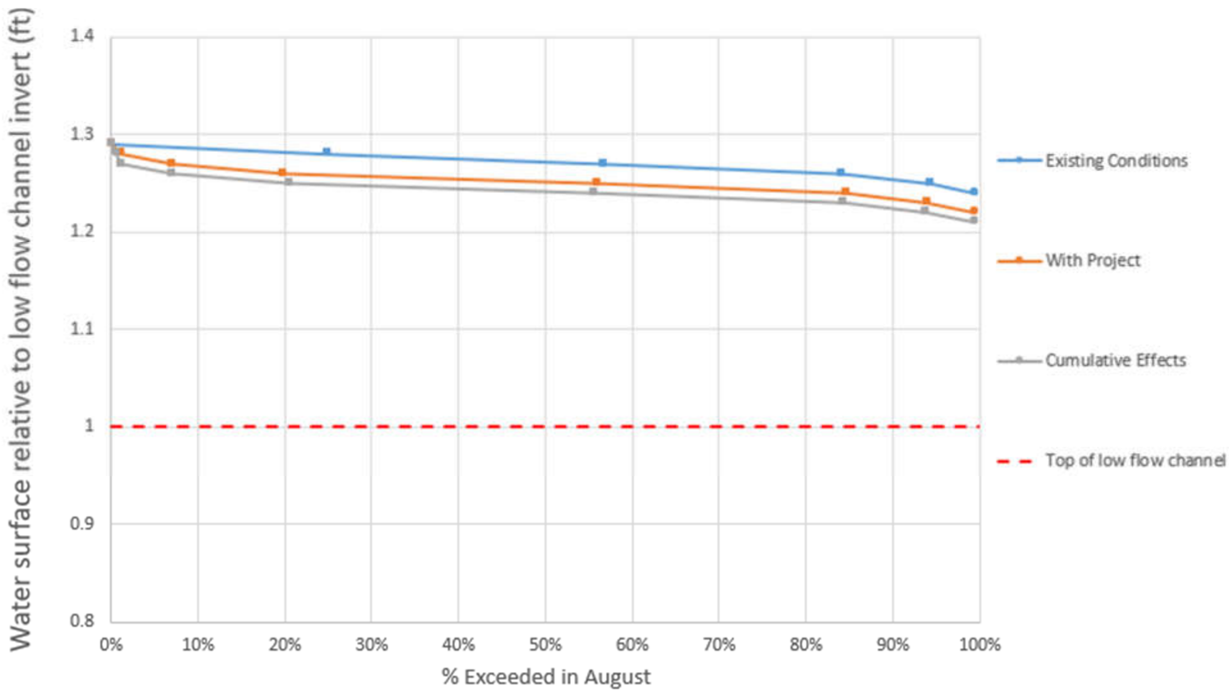


Figure 16. Flow exceedance curve for Cross Section 16670

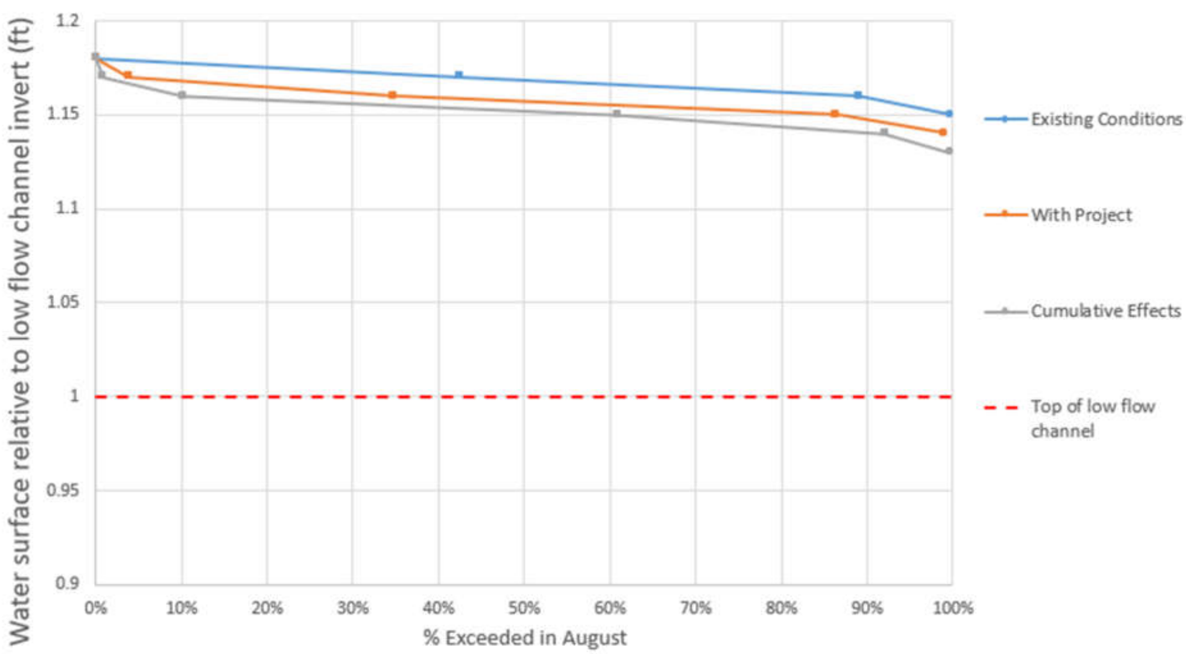


Figure 17. Flow exceedance curve for Cross Section 21000

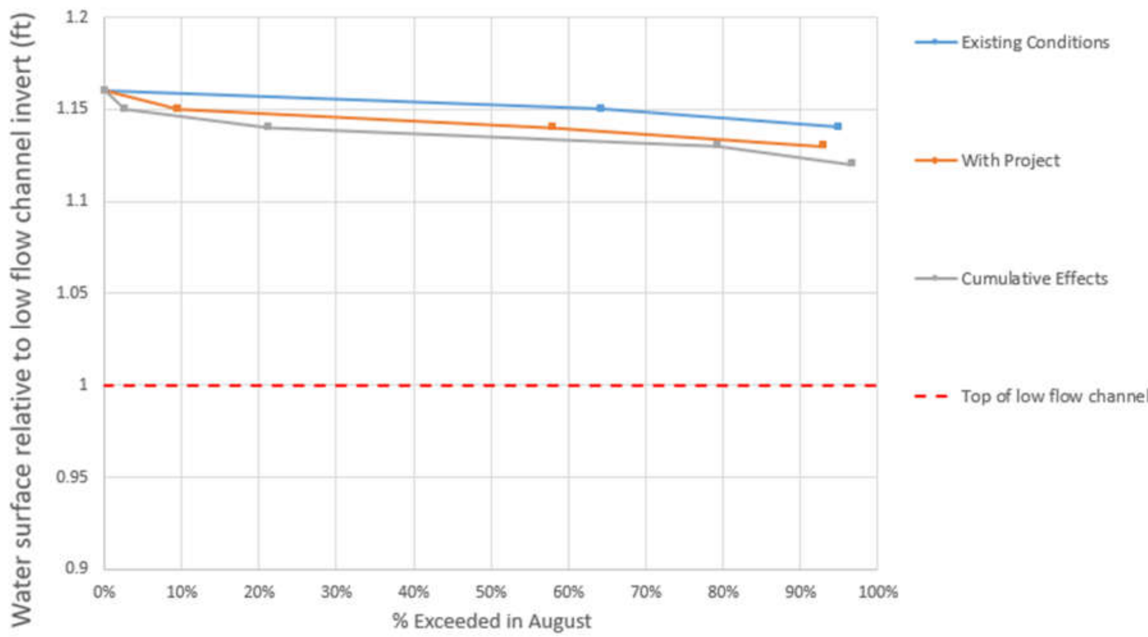


Figure 18. Flow exceedance curve for Cross Section 27040

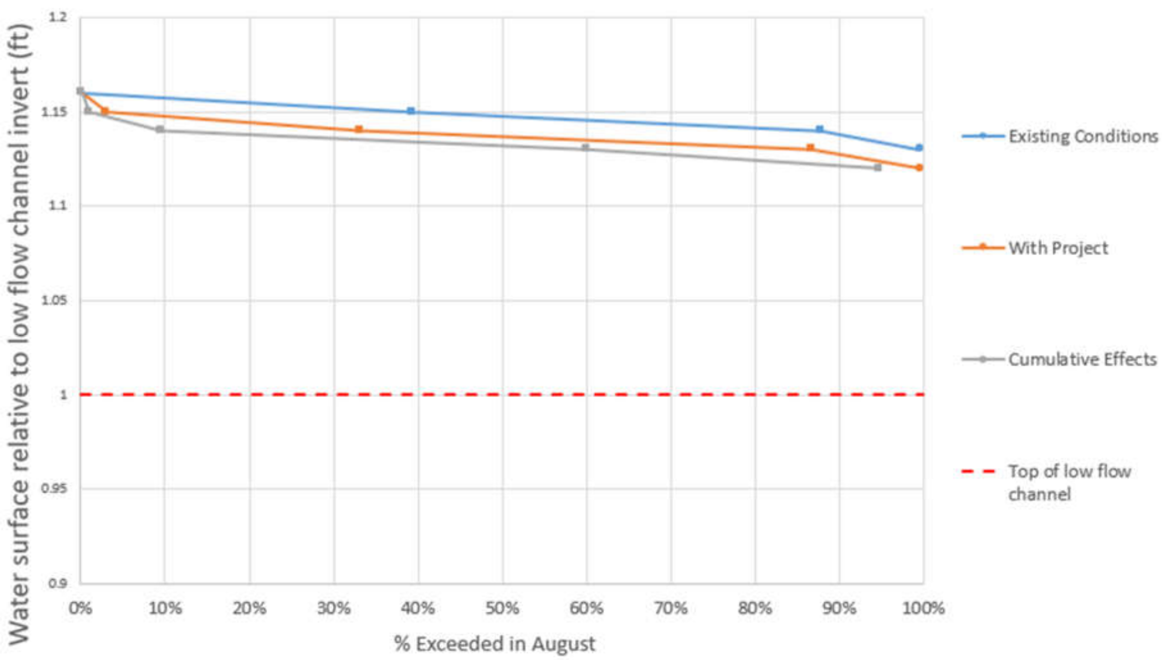


Figure 19. Flow exceedance curve for Cross Section 32900

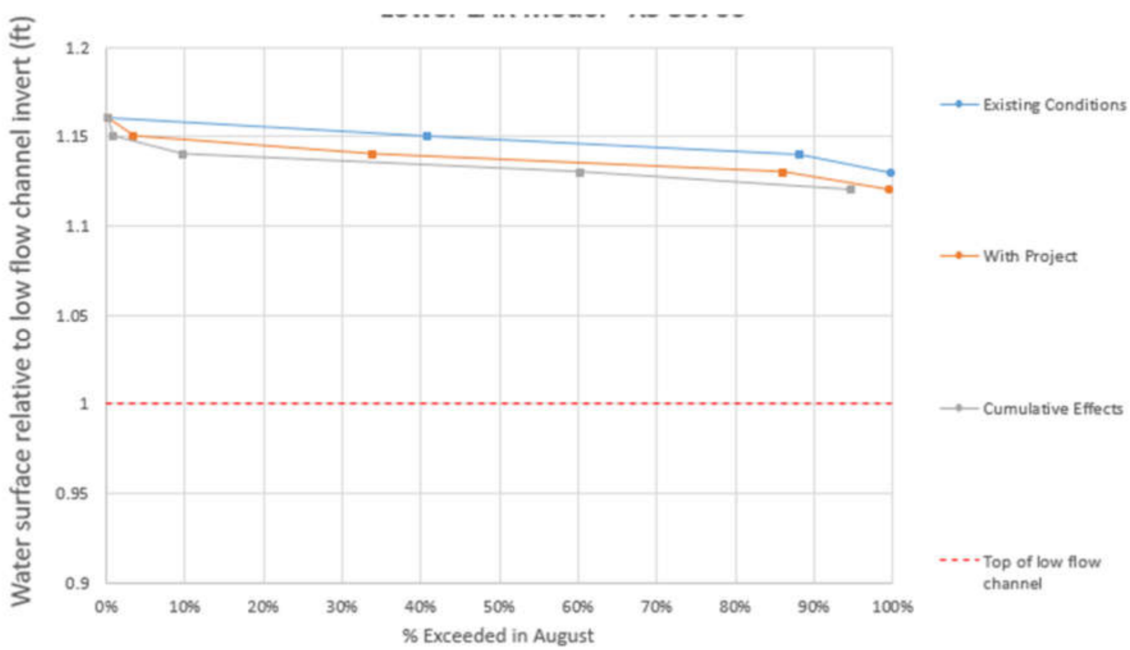


Figure 20. Flow exceedance curve for Cross Section 38700

4.1 Effects on Estuary

To assess the effects of the Project on flows of fresh water to the estuary, ESA calculated the percentage of flow reduction in the LA River at the most downstream gage (Wardlow Road). The Project reduction represents 4% of August 2008 flow, and the Cumulative flow reduction is 11% of flow at Wardlow Road. This represents the flow reduction in the driest month of the driest year within the eleven years for which flow data at all relevant gages were available. Thus, in all other months and years, the Project effects would be smaller than calculated above.

SECTION 5
Summary and Conclusions

5.1 Segment A

During winter and spring, the Project flow reduction from Glendale WRP would be “drowned out” by flows in the LA River, with Project flows constituting 0.1 – 4% of flow in the LA River between the LAG WRP and the Arroyo Seco confluence. The Project flows constitute a 10% reduction in flows in the LA River during the August 2008 Condition. The August 2008 Condition represents the lowest flow in the LA River during the most recent eleven-year period for which data is available, and using this as a baseline shows the Project impacts overlain at a time of higher than average sensitivity – a very conservative analysis.

The Project flow reduction translates to an average reduction in flow depth between the LAG WRP discharge point and the confluence with the Arroyo Seco of four tenths of an inch, and a reduction in flow velocity of 2%. The shrinkage in wetted channel area is 1.5 acres over a 5.4-mile reach (1.9% of the existing wetted channel area (81 acres) under the August 2008 Condition, equivalent to a 7-inch wide strip on either side of the channel). 26% of the shrinkage in wetted area occurs on concrete lined bank or bed areas, and 74% on soft bottomed channel.

The modeled reductions in flow depth and velocity are considered to be well within the range of error and uncertainty for hydrologic data collection and modeling, and would likely be close to undetectable in the field. Reviewing the flow conditions relative to the needs of recreational users and riparian and aquatic species, changes are considered to be unlikely to have an impact.

The cumulative effects of the Project and the Burbank project flow reductions are larger, but still very small and barely detectable. Cumulatively, under the worst case flow scenario, the projects would reduce water depths in Study Area Segment A by half an inch, on average, and the maximum change would be less than an inch. These flow reductions will result in a less than significant impact on aquatic species, riparian habitat and recreational uses of the LA River within Segment A.

5.2 Segment B

As with Segment A, the Project flow reduction would be drowned out during the winter due to much higher flows from the watershed. During the August 2008 worst case condition, the Project would reduce flows in Segment B by 4%. Effects at Segment B are less than in Segment A because of the “diluting” effect of additional flow gains downstream.

The Project would not result in areas of algal mat drying out: for the conditions modeled, flows continued to exceed the capacity of the low flow channel and spill out onto the wider concrete bottom of the flood control channel, maintaining shallow wetted conditions that support algal growth (Figure 20). The average change in water level over the Segment B is 0.25 inches for Project conditions, and 0.35 inches for cumulative conditions.

The modeled flow reductions are expected to result in a less than significant impact on algal growth within Segment B.

5.3 Estuary

The Project reduction represents 4% of August 2008 flow, and the Cumulative flow reduction is 11% of flow at Wardlow Road, during August of the driest year analyzed. The Project does not appear likely to have a detrimental effect on the inputs of freshwater to the estuary.

SECTION 6
References

County of Los Angeles Department of Public Works, Hydrologic Report for the years 2005-06 to 2015-2016.

ESA 2017a LA River Reduced Discharge Study: Hydraulic Modeling Report II

ESA 2017b City of Glendale Wastewater Change Petition WW0097 Project Biological Resources Assessment of the LA River.

USACE 2013. LA River Ecosystem Restoration Feasibility Study: Appendix F5 – Hydrology and Hydraulics.

USACE 2016. Hydraulics Report. Floodplain Analysis: Barham Boulevard to First Street, Floodplain Management Services Special Study.

SECTION 7
List of Preparers

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to Glendale Water and Power

cc

from ESA

subject Exhibit A to Hydraulic Modeling Report for Glendale Water and Power Wastewater Change Petition and Recycled Water Distribution Project

ESA conducted a review of all publically-available reports and information on activities that have the potential to impact Los Angeles River flows to determine if they had to be included in the City of Glendale's (Glendale) Hydraulic Modeling Report.[1] Descriptions of each project are set forth below. The projects are divided into projects that were included in Glendale's Hydraulic Modeling Report and projects or activities that were not considered because they are not "past, present, [or] probable future projects producing related or cumulative impacts" within the meaning of CEQA Guidelines, section 15130(b)(1)(A), and therefore are not required to be included in the cumulative impacts analysis for the proposed Project.

A. Projects Included in Glendale's Hydraulic Modeling Report.

1. Burbank Wastewater Change Petition WW0091 and Change Petition WW0019 (Burbank Petitions)

Description: The City of Burbank (Burbank) discharges tertiary-treated wastewater from its Burbank Water Reclamation Plant ("BWRP") to the Burbank Western Channel ("Channel"), which is located approximately 4.7 miles upstream from the Los Angeles-Glendale Water Reclamation Plant (LAG WRP), of which 2.5 miles are within the LA River and the remaining 2.2 miles are within the Burbank Western Channel. During Financial Year 2015/16 5,376 acre-feet (AF) of tertiary treated effluent was discharged by BWRP (7.4 cfs). As a result of increased demand for recycled water within the Upper Los Angeles River Area, the City is proposing to gradually increase its use of recycled water, thereby reducing its discharge of treated wastewater into the channel over the next ten years from 5,376 AFY (7.4 cfs) to approximately 3,766 AF (5.2 cfs).

[1] In preparation of the analysis in this section, ESA consulted the State Clearinghouse for all proposed projects subject to CEQA with the potential to reduce flows to the LA River. Additionally, ESA also reviewed the SWRCB website to gather information regarding all known pending and completed wastewater change petitions that could contribute to cumulative effects in conjunction with the proposed project.

Environmental Review: The Negative Declaration for the Burbank Petitions was approved by Burbank on September 12, 2017 (Burbank ND).

Cumulative Impacts: The cumulative impacts of the Burbank Petitions are evaluated in the Glendale Hydraulic Modeling Report because this project proposes to reduce dry year wastewater discharges to the River. These proposed reductions in discharges were modeled in the Burbank ND and are the subject of the Petitions filed by Burbank. For the purposes of evaluating the cumulative impacts of the Burbank Project, Glendale's Hydraulic Modeling Report provided an assessment of project effects as well as cumulative effects from the Burbank Petitions under a worst-case conservative scenario. (See Glendale's Hydraulic Modeling Report.) The analysis found that cumulative impacts to recreational uses and biological resources from both the Glendale and the Burbank Petitions were less than significant.

B. Projects or Activities that Were Not Included in Glendale's Hydraulic Modeling Report

1. One Water LA 2040 (In progress)

Description: The City of Los Angeles is preparing the One Water LA Plan, an integrated framework approach for water supply, wastewater treatment, and stormwater management that will expand the IRP (project # 12 below) horizon to 2040 (from 2020).[2] The plan identifies opportunities to manage water in a more efficient and sustainable manner. The One Water LA Plan is still being prepared and is expected to be published in 2018. No quantitative data on dry season flow reductions to the Los Angeles River as a result of implementation of the One Water LA Plan could be found.

Environmental Review: To date, no CEQA analysis has been undertaken for the One Water LA Plan. A programmatic level EIR is anticipated in 2018.

Cumulative Impacts: Proposals that have not crystallized to the point that it would be reasonable and practical to evaluate its cumulative impacts need not be treated as a probable future project and therefore this plan was not included in the Hydraulic Modeling Report.

2. Lower Los Angeles River Revitalization Plan (In progress)

Description: In 2015, Governor Jerry Brown signed Assembly Bill 530 (Rendon), authorizing the creation of a local "Working Group" to develop a Lower LA River Revitalization Plan (LLARRP) from Vernon to Long Beach.[3] This plan will be part of an update to LA County's Master Plan. The purpose of the LLARRP Working Group is to provide input and direction to formulate a plan to revitalize the Lower LA River and to identify strategies for addressing community concerns. In the Draft Final LLARRP, the Working Group and community have identified 200 locations for revitalization (features along the 19-mile lower LA River[4]). Seven preliminary projects have been identified: (1) Atlantic Boulevard and Upper Segment Multi-Use Easement; (2) Cudahy River Park; (3) Rio Hondo Confluence; (4) Middle Segment Crossover and Multi-Use

[2] https://www.lacitysan.org/san/faces/home/portal/s-lsh-es/s-lsh-es-owla?_afrLoop=12283031563750846&_afrWindowMode=0&_afrWindowId=null#!%40%40%3F_afrWindowId%3Dnull%26_afrLoop%3D12283031563750846%26_afrWindowMode%3D0%26_adf.ctrl-state%3Dynmvxmf6q_58

[3] http://lowerlariver.org

[4] http://lowerlariver.org/the-plan/

Easement; (5) Compton Creek Confluence; (6) Wrigley Heights River Park; and (7) Willow Street Improvements. Currently the working group is brainstorming about projects that will serve as recreational amenities along the Lower LA River, such as the new walking and bike trails, street improvements and parks.

On October 18, 2016 the County of Los Angeles Board of Supervisors passed a motion for Public Works to update the LA River Master Plan by incorporating the LLARRP, as well as other existing planning efforts. A draft Plan is anticipated for December 2019, with the final Plan expected by June 2020.

Environmental Review: No CEQA documents could be found. No quantitative data could be found on how revitalization efforts in the Lower LA River might affect summer dry season flows. Most of the planned projects involve improvements along the River, not within the River channel.

Cumulative Impacts: Proposals that have not crystallized to the point that it would be reasonable and practical to evaluate its cumulative impacts need not be treated as a probable future project and therefore this was not included in the Hydraulic Modeling Report. In addition, it is unlikely that the LLARRP will result in "related impacts" as the proposed revitalization improvements along the Lower LA River do not propose to remove flows from the River (as the proposed Project does).

3. 2017 Sanitation Districts of Los Angeles County's Wastewater Change Petition (WW00098)

Description: The Sanitation Districts of Los Angeles County's Wastewater Change Petition proposes a reduction at the Whittier Narrows Water Reclamation Plant (WNWRP) of 0.1 cfs in August. The WNWRP discharges wastewater into the Rio Hondo, a tributary to the LA River.

Environmental Review: No CEQA documents could be found. However, one of the attachments to the Petition states: "Chambers Group does not anticipate that a daily reduction of approximately 1.1 percent would have any discernible impacts to biological resources downstream of the WNWRP discharge locations. The remaining daily average discharge of 5.985 MGD is believed to be a sufficient amount of water to maintain regular ephemeral flow and to support the riparian community ecosystem at or above its current habitat quality levels."

Cumulative Impacts: Because wastewater from the WNWRP enters the LA River in the concrete section at the Rio Hondo confluence downstream of Segment A of Glendale's Study Area, it was not considered in the cumulative impacts analysis for the proposed Project. In addition, a reduction of 0.1 cfs will have no material impact on Segment B of the Study Area, which begins several miles below the Rio Hondo confluence.

4. The 2015 Army Corps of Engineers (ACOE) Los Angeles River Ecosystem Restoration Feasibility Study (LAREFS)

Description: The LAREFS assesses the potential to restore 11 miles of the Los Angeles River from Griffith Park to downtown LA while maintaining existing levels of flood risk management.[5] The study evaluated numerous alternatives. The approved plan for restoration in part of the Glendale Study Area is Alternative

5 http://www.spl.usace.army.mil/Missions/Civil-Works/Projects-Studies/Los-Angeles-River-Ecosystem-Restoration/

20, the locally preferred plan, which includes compatible recreation features. The recommended plan includes creating new habitat through the following measures and features: riparian habitat corridor restoration throughout the 11 miles; restoration of the Arroyo Seco confluence; restoration of the Verdugo Wash confluence; restoration of riparian habitat; removal of channel concrete and riverbed restoration for 0.75 miles; restoration of freshwater marsh in the Los Angeles State Historic Park; restoration of riparian habitat and reconnection to the historic floodplain in Taylor Yard; river widening in 2 reaches; restoration of 13 minor tributaries through stream daylighting; establishment of side channels; and removal of invasive vegetation throughout the project area. Restoration measures include creation and re-establishment of riparian and freshwater marsh habitat to support increased populations of wildlife and enhance habitat connectivity within the study area. The hydrologic assessment of the LAREFS focused on the effects of high flows (flood risk) rather than on water availability at low flows.

Environmental Review: The final EIS/EIR was prepared in September 2015 and certified in June 2016. An addendum to the IFR EIS/EIR has been prepared to support the acquisition of the Taylor Yard G2 Parcel, included in Reach 6 of the Project.[6] No data were found that quantified the effects of the project on available dry weather flow in the Los Angeles River. Instead, the "Hydraulics and Hydrology" (Appendix E) analyzed whether the proposed alternatives would impact the flood control functions of the Los Angeles River Channel. The EIR found that: "Cumulative impacts to hydrology, floodplains, and water quality are expected to be beneficial under both the No Action Alternative and the restoration Alternatives."[7] In addition, the ACOE found: "The restoration measures in the action alternatives would contribute to beneficial cumulative impacts to biological resources. These impacts would increase the amount of fish and wildlife habitat; provide greater ecological/biological benefits; aid in linking isolated habitats; help increase the amount of open space; help expand species diversity; and reduce the amount of impermeable surface area in the study area."[8]

Cumulative Impacts: The LAREFS was not included in the Hydraulic Modeling Report because (1) the LARRMP did not quantify the impacts of the proposed measures on dry weather River flows; and (2) the LARRMP will not result in "related impacts" as the proposed restoration actions do not propose to remove flows from the River (as the proposed Project does). Rather, the LAREFS will improve the types of vegetation in and around the River and widen channels to slow peak velocity flows (wet weather flood flows) to improve habitat and the health of biological resources.

5. <u>2015 City of Los Angeles Enhanced Watershed Management Plan (EWMP)</u>

Description: The City of Los Angeles' EWMP focuses on enhancing water quality and meeting Total Maximum Daily Load (TMDL) targets throughout various watersheds. In 2015, the City of Los Angeles prepared a plan for the Upper Los Angeles Watershed.[9] The area included in the ULAR EWMP is approximately 479 square miles. The plan focuses on minimizing pollutants while maximizing retention of stormwater via low impact development, treatment wetlands, green streets, and retaining stormwater onsite to prevent runoff.

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6 See Los Angeles City Council File 13-1641.
7 LAREFS, EIS/R, p. 5-176.
8 LAREFS, EIS/R, p. 5-176.
9 http://www.lastormwater.org/green-la/enhanced-watershed-management-plans/

Environmental Review and Cumulative Impact Analysis: The final Programmatic EIR for the EWMP was prepared in April 2015 and an addendum was filed in June 2015.[10] As stated in the Programmatic EIR: "As individual projects identified in the EWMPs are fully developed, the implementing agency (i.e., the Permittee responsible for implementing the project) will conduct CEQA analysis for individual projects as appropriate or may determine that no additional CEQA analysis is required or that a project is exempt from CEQA." Accordingly, no project level CEQA analysis is available for any of the projects described in the EWMP.

Cumulative Impacts: Though many of the measures proposed in the EWMP could reduce stormwater runoff by increasing infiltration, the plan does not provide a project level review of specific projects or a quantitative assessment of the consequences for dry season runoff to the Los Angeles River. Accordingly, the EWMP was not included in the Hydraulic Modeling Report.

6. 2015 LADWP Stormwater Capture Master Plan (SWCMP)

Description: The City of Los Angeles' SWCMP is a high-level plan to increase the capture of stormwater that currently runs off via the Los Angeles River and other waterways, using a mixture of centralized and decentralized facilities.[11] The SWCMP is an outline for policymakers that will explain LADWP's strategies for the next 20 years to implement stormwater and watershed management programs, projects, and policies in the City of Los Angeles. Projects and programs recommended in the SCMP require approval by the LADWP Board of Commissioners on a case–by–case basis. The SWCMP will serve as a guiding document for policymakers to consider when making decisions about programs and policies that impact L.A.'s water resources. Since the majority of Los Angeles' stormwater runoff occurs during the winter, most of the flow reduction effects would be experienced during the winter. However, facilities would capture some dry weather runoff as well, e.g. by increasing infiltration of stormwater. Nonetheless, the SWCMP does not quantify or study summer flow reductions as a result of this plan. Instead, the SWCMP explains that via this plan they could reduce peak flows in the Los Angeles River during wet weather events.[12]

Environmental Review: No CEQA documents could be found. The SWCMP states that specific stormwater programs will be studied as they are further developed.

Cumulative Impacts: The SWCMP was not included in the Hydraulic Modeling Report because the SWCMP is a high level planning document that did not quantify the impacts of the proposed measures on dry weather River flows.

7. 2013 Los Angeles River Diversion, State Historic Park

Description: The State Water Resources Control Board authorized the diversion and use of water from the Los Angeles River by the City of Los Angeles on October 24, 2013. A maximum amount of 106 AFY can be

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[10] http://www.lastormwater.org/green-la/enhanced-watershed-management-plans/

[11] https://www.ladwp.com/ladwp/faces/wcnav_externalId/a-w-stormwatercapturemp?_afrLoop=288541137126279&_afrWindowMode=0&_afrWindowId=null#%40%3F_afrWindowId%3Dnull%26_afrLoop%3D288541137126279%26_afrWindowMode%3D0%26_adf.ctrl-state%3Dfc4ex51o6_4

[12] SWCMP, p. 77.

diverted to irrigate 42.6 acres of land in the Los Angeles State Historic Park through the use of an inflatable dam. Authorized use of water will be completed by December 31, 2029.[13]

Cumulative Impacts: The proposed 0.15 cfs diversion was not included in the Hydraulic Modeling Report because the water will be diverted downstream of the Arroyo Seco confluence, and therefore will not impact Segment A of the Study Area, which ends at Arroyo Seco. In addition, a reduction of 0.15 cfs will have no material impact on Segment B of the Study Area, which begins several miles below the Los Angeles State Historic Park.

8. 2012 City of Los Angeles Recycled Water Master Planning Documents (2012 RWMP)

Description: These high level planning documents outline a series of upgrades to the City of Los Angeles' major WRPs (TWRP (Tillman), LAGWRP, Terminal Island and Hyperion) to increase capacity to recycle and store water, as well as projects to use the recycled water for non-potable purposes or direct it to groundwater storage.[14] The RWMP documents include: (1) Groundwater Replenishment Master Planning Report; (2) Groundwater Replenishment Treatment Pilot Study; (3) Non-Potable Reuse Master Planning Report, (4) Terminal Island Water Reclamation Plant Barrier Supplement, (5) Non-Potable Reuse Concepts Report, and (6) Long-Term Concepts Report. The documents are intended to guide recycled water planning through 2035, to support the goal of increasing recycled water use citywide to 59,000 AFY by 2035. The Plan explains that the City of Los Angeles has existing recycled water infrastructure to serve approximately 8,000 AFY of nonpotable water, and is currently planning, designing, or constructing expansions of recycled water infrastructure that will deliver an additional 11,350 AFY. Most of the City of Los Angeles' future recycled water supply will be produced from wastewater treated at the City's Terminal Island Plant near the City of Long Beach. The RWMP provides that TWRP, which has a capacity to produce up to 80 million gallons per day (mgd) of tertiary recycled water,[15] will continue to discharge at least 27 mgd to the Los Angeles River (nearly 42 cfs), while meeting existing and future recycled water needs in the City of Los Angeles.[16] In other words, even if 41 mgd of recycled water from TWRP was used to serve nonpotable uses and recharge local groundwater basins by 2035, 27 mgd would continue to flow to the River to sustain habitat.

Environmental Review: No CEQA documents were found for the 2012 RWMP itself and no Wastewater Change Petition has been filed by the City of Los Angeles to reduce wastewater flows from any of its treatment plants to the LA River. Further, the 2012 RWMP does not quantify reductions in summer flows to the Los Angeles River but commits to continuing to discharge 27 mgd from TWRP to sustain River habitat.

[13] State Water Resources Control Board. Right to Divert and Use Water, Permit 21342 (2013).

[14] https://www.ladwp.com/ladwp/faces/wcnav_externalId/a-w-rcycl-wtr-prjct;jsessionid=NSyjZZ8dvp5QQDfTpLV6WCt32vBTHflBrFPQcLtrLwhCr4Hp1rtF!91202021?_afrLoop=38291653305451&_adf.ctrl-state=kqj9apzad_29&_afrWindowMode=0&_afrWindowId=null#%40%3F_afrWindowId%3Dnull%26_afrLoop%3D38291653305451%26_afrWindowMode%3D0%26_adf.ctrl-state%3Dx19y5beej_4

[15] The Groundwater Replenishment Master Planning Report provides that TWRP "is designed to treat 80 million gallons per day (mgd), however, at this time, flows to the plant are lower. The RWMP planning team assumed 70 mgd of tertiary effluent would be available for all uses."

[16] Groundwater Replenishment Master Planning Report, p. ES-11.

Cumulative Impacts: The 2012 RWMP was not included in the Hydraulic Modeling Report because the RWMP is a high level planning document that did not quantify the impacts of the use of additional recycled water on dry weather River flows. While the Hydraulic Modeling Report accounted for a portion of flows from TWRP (Tillman), the City of Los Angeles has committed to continuing to discharge at least 27 mgd of wastewater from TWRP and therefore it was reasonable to rely on this continued flow. Any future reduction in wastewater flows from the City's Terminal Island or Hyperion Plants to the LA River would have no impact on Segment A of Glendale's Study Area for the proposed Project and therefore would not impact Glendale's flow analysis (see Hydraulic Modeling Report) because the Terminal Island and Hyperion Plants are downstream of Segment A. In addition, the City's Terminal Island and Hyperion Plants discharge directly to the Pacific Ocean and therefore any change in discharge would not impact Segment B of the Study Area or the estuary.

The City of Los Angeles has various recycled water projects in various stages of planning, design, or construction. These projects include:

8.a. 2017 Pershing Drive Recycled Water Pipeline

LADWP partnered with the Los Angeles World Airports (LAWA) and the Los Angeles Department of Public Works, Bureau of Sanitation (LASAN) to provide recycled water to LAX. LASAN will construct an advanced water treatment plant at Hyperion to produce up to 1.5 million gallons per day with reverse osmosis and advanced oxidation process treatment. LADWP will construct a recycled water pipeline between Hyperion and LAX, and in turn, LAWA will construct pipeline within the airport to complete the connection.

No CEQA documents are currently available and therefore this project was not included in the Glendale Hydraulic Flow Analysis. In addition, any change in discharge of wastewater from the Hyperion Plant will not impact the Glendale Study Area as described above.

8.b. 2016 Machado Lake Pipeline Project

The Machado Lake Pipeline Project is a water infrastructure investment that will bring recycled water to the local parks, oil refineries, and golf courses in the Harbor area for uses such as landscape irrigation and industrial processes. The project will install approximately 3,400 feet of pipeline to bring recycled water from the Terminal Island Water Reclamation Plant.

The project, a joint-agency effort between the LADWP, the City of Los Angeles Department of Public Works, Bureau of Sanitation (BOS), and the City of Los Angeles Department of Public Works, Bureau of Engineering (BOE), will supply up to 4.2 billion gallons per year of recycled water, via "purple pipeline," to customers including Harbor Regional Park, Machado Lake, and the Dominguez Gap Barrier.

No CEQA documents are currently available and therefore this project was not included in the Glendale Hydraulic Flow Analysis. In addition, any change in discharge of wastewater from the Terminal Island Water Reclamation Plant will not impact the Glendale Study Area as described above.

8.c. 2016 Elysian Park - Downtown Water Recycling Projects

The Elysian Park-Downtown Water Recycling Projects (WRPs), two separate projects, will supply approximately 2,741 acre-feet per year (AFY) of recycled water for irrigation and industrial uses to Elysian Park, Downtown Los Angeles, Chinatown, Exposition Park, Boyle Heights, and Southeast Los Angeles.

Project features include construction of a two million gallon tank at Elysian Park, 97,300 linear feet (18 miles) of 16-inch recycled water pipeline (purple pipe), construction of two 3,000 gallon per minute (GPM) pump stations, and a 30,000 gallon forebay tank to provide a potable backup to the recycled water system.

The EIR was certified in June 2016.[17] The EIR provides: "Regarding impacts on flows, a change in the volume of discharges to the Los Angeles River due to implementation of the proposed project is not anticipated and, thus, no impacts to the river's biological resources, habitat, or recreational opportunities are anticipated to occur…. By increasing flows to the plant, the Chevy Chase Sewer Diversion Project will result in an increase in the overall amount of recycled water produced at LAG, ensuring enough recycled water to supply the [WRPs] without affecting current discharges to the Los Angeles River. Therefore, a change in the volume of discharges to the river due to implementation of the proposed project is not anticipated and no impacts to the river's biological resources, habitat, or recreational opportunities would occur." (WRP EIR, 3-118 to 119.)

Because this project will not impact the River's flows, it was not included in the Glendale Hydraulic Flow Analysis.

8.e. 2016 Los Angeles Groundwater Replenishment Project

Description: This Project is the outcome of the planning process in the City of Los Angeles' 2012 RWMP to increase the use of recycled water, and replenish the groundwater basin where it can eventually be pumped and supplied to homes for drinking and non-drinking uses. The Los Angeles Groundwater Replenishment (GWR) Project will provide up 30,000 AF of treated wastewater, per year, from TWRP (Tillman) to the Hansen and Pacoima Spreading Grounds in the eastern San Fernando Valley. TWRP has a capacity to treat up to 80 mgd of wastewater if both the existing 40-mgd phases are operational. However, only a single phase is currently operated at a given time. Currently, the wastewater that would otherwise reach TWRP (Tillman) bypasses the plant and is conveyed to Hyperion Treatment Plant in Playa Del Rey, where it undergoes a secondary level of treatment and is discharged into Santa Monica Bay. This project proposes to operate both 40 mgd phases to provide sufficient effluent to support the 30,000 AFY goal. The EIR for the project reiterates that the City will continue to discharge at least 27 mgd to the Los Angeles River (nearly 42 cfs), while meeting existing and future recycled water needs in the City of Los Angeles. Construction is scheduled from 2019 to 2022 and spreading operations are expected to start mid-2023.

[17] https://www.ladwp.com/ladwp/faces/wcnav_externalId/a-fr-envirt-repo-archive?_adf.ctrl-state=t1eqvl7l_4&WT.mc_id=pev_confpage)&_afrLoop=408280291888862&_afrWindowMode=0&_afrWindowId=el2yxrhuy#%40%3F_afrWindowId%3Del2yxrhuy%26_afrLoop%3D408280291888862%26WT.mc_id%3Dpev_confpage%2529%26_afrWindowMode%3D0%26_adf.ctrl-state%3Du9jc0t7tb_46

Environmental Review: The Draft EIR was completed in May 2016 and the Final EIR was certified by the City of Los Angeles in December 2016. The EIR finds that there will be no impacts to the River's biological resources because the same amount of treated wastewater will continue to flow the River.[18]

Cumulative Impacts: The 2012 RWMP was not included in the Hydraulic Modeling Report because, as discussed above, after project implementation, a minimum annual average of 27 mgd would continue to be provided to the River from TWRP. Therefore, the project, which would utilize the available unused treatment capacity of TWRP to provide recycled water for the advanced water purification processes, would not result in a change in discharge to the River.

8.d. 2015 Griffith Park South Water Recycling Project

The Griffith Park South Water Recycling Project (GPSWRP) will extend the existing recycled water system to the southern facilities of Griffith Park to increase recycled water supply and offset the demand of potable water in Central Los Angeles. LADWP has identified Roosevelt Golf Course as a customer for recycled water as the golf course currently uses potable water for irrigation. The GPSWRP will provide 370 AFY of recycled water produced by LAG and used for irrigation at the Roosevelt Golf Course and future areas of expansion within Griffith Park.

The final MND was approved by LADWP in March 2014. The MND does not identify any reductions in discharge to the LA River from the LAG WRP and therefore was not included in the Glendale Hydraulic Flow Analysis. The expected completion date of the project is September 2018.

9. 2012 Tujunga Spreading Grounds Enhancement Project

Description: This project plans to capture an average of 8,000 AFY of stormwater to recharge into the San Fernando Groundwater Basin via the Tujunga Spreading Grounds. Stormwater from the largely undeveloped mountain areas flows first to Hansen Dam, where it is temporarily held, and then released to Tujunga Wash (a tributary to the Los Angeles River), from which it can be diverted to the project site.

Phase 1 construction began in July 2016 and is anticipated to be completed in Fall of 2019. Phase 2 of the construction will begin in April 2019. The projected completion date is 2020.

Environmental Review: The FEIR was approved in June 2013. No quantitative data could be found on how this project might affect summer dry season flows in the LA River, likely because this project focuses on capturing wet weather flows to reduce flooding during precipitation events. The EIR concluded that the "project will result in a reduction of stormwater runoff which subsequently becomes polluted from mixing with urban runoff and enters the Los Angeles River, and therefore is expected to have a beneficial impact on surface water quality."[19]

Cumulative Impacts: The EIR does not provide a quantitative assessment of the consequences for dry season runoff to the Los Angeles River. Accordingly, the Tujunga project was not included in the Hydraulic Modeling Report.

[18] DEIR, p. 3.4-19; FEIR, p. 3-51.
[19] DEIR, p. 2-12.

10. 2007 Los Angeles River Revitalization Master Plan

Description: The Los Angeles River Revitalization Master Plan (LARRMP) is a blueprint for a variety of greening projects within half a mile of the river along a 32 mile stretch of the river within the City of Los Angeles, to be implemented in near term (5-20 years) and long term (20-50 years).[20] Proposed measures include creating more natural channel reaches and planting vegetation along the bottom of the channel, creating a greenway along the bank of the channel and routing stormdrains through bio-swales and bio-filtration systems.

Measures in the LARRMP within the Glendale Study Area include:

- Expand Verdugo Wash confluence
- Taylor Yard – create one mile of water quality terraces within the high flow channel area and modify the channel bottom to provide habitat

Environmental Review: The final PEIR/PEIS was prepared in April 2007. The impact assessment of the EIR is at the programmatic level, not the project level and no specific projects were described in a manner that allows analysis of the effects of the LARRMP on dry weather flows in proposed Project's Study Area. In addition, none of these proposed measures will directly remove water from the LA River. Rather, the proposed measures are designed to improve habitat and biological resources. The LARRMP proposes to increase vegetation within the Los Angeles River from 30-50%. This increase in habitat would reduce peak flow rates (primarily in the winter months) in the Los Angeles River improving fish and wildlife habitat.[21] "Increasing the amount of vegetation in the channel and reducing water velocities would improve water quality and the ecological productivity of the river, along with improving the aesthetics and recreational use of the area."[22] The City of Los Angeles concluded: "Overall, potential net cumulative long-term impacts on biological resources associated with the LARRMP are expected to be beneficial. Implementing the LARRMP measures would increase the amount of fish and wildlife habitat; provide greater ecological/biological benefits; aid in linking isolated habitats; help increase the amount of open space; help expand species diversity; and reduce the amount of impermeable surface area in the River Corridor."[23]

Cumulative Impacts: The LARRMP was not included in the Hydraulic Modeling Report because (1) the LARRMP did not quantify the impacts of the proposed measures on dry weather (summer) River flows; and (2) the LARRMP will not result in "related impacts" because the project does not propose to remove flows from the River (as the proposed Project does), but instead proposes to increase the amount of vegetation in the River to slow peak velocity flows (wet weather; winter) in order to improve habitat and the health of biological resources.

11. 2006 Arroyo Seco Watershed Management and Restoration Plan

20 http://boe.lacity.org/lariverrmp/

21 LARRMP Final PEIR/S Findings and Statement of Overriding Considerations, April 2007, p. 24.

22 LARRMP Final PEIR/S, p. 4-30.

23 LARRMP Final PEIR/S Findings and Statement of Overriding Considerations, April 2007, p. 46.

Description: The Arroyo Seco Watershed Management and Restoration Plan was prepared for the State Water Resources Control Board in 2006. The study is intended to build upon the work completed during the 2002 Arroyo Seco Watershed Restoration Feasibility Study (ASWRFS). This Plan developed policies to manage and restore water quality and habitat in the Arroyo Seco watershed (tributary to the Los Angeles River). The Plan focused on water quality and habitat, and included a series of recommended projects to enhance water quality and habitat improvement, including restoration of riparian areas with native plants.

Environmental Review: No CEQA documents were located. No quantitative data could be found on how revitalization efforts along Arroyo Seco might affect summer dry season flows in the LA River.

Cumulative Impacts: Proposals that have not crystallized to the point that it would be reasonable and practical to evaluate its cumulative impacts need not be treated as a probable future project and therefore this was not included in the Hydraulic Modeling Report. However, these revitalization efforts are proposed to occur downstream of Segment A of the Study Area for the proposed Project and therefore would not impact Glendale's flow analysis (see Hydraulic Modeling Report). Glendale's flow analysis did not include the area downstream of the Arroyo Seco confluence and above Segment B because from this point downstream the River is a concrete channel.

12. 2006 LASAN Water Integrated Resources Plan (IRP)

Description: The 2006 LASAN IRP integrates planning for wastewater, recycled water, and stormwater.[24] The IRP reviewed the water and wastewater needs of the City of Los Angeles through 2020 and identified necessary infrastructure improvements and policy recommendations. The IRP describes upgrades to the infrastructure of the Los Angeles River Watershed based on increases in wastewater flows due to population increase. The Approved Alternative Includes expanding TWRP to 100 mgd; adding storage to TWRP and LAGWRP; and upgrading Hyperion. Wastewater treatment capacity at TWRP would be expanded by increasing capacity from 64 mgd to 100 mgd. The Alternative also proposed to use an additional 56,100 afy of recycled water and would manage up to 42 percent of dry weather flow and up to 47 percent of wet weather urban runoff generated in the City of Los Angeles. However, recycled water projects and runoff management techniques were not sufficiently developed to be analyzed at a project level.

Environmental Review: The final EIR for the IRP was prepared in September 2006. The IRP components analyzed at a project level are: (1) proposed process upgrades to and/or capacity expansions to existing wastewater treatment and reclamation plants, and (2) construction of new wastewater conveyance system pipelines. None of these will result in a reduction in River flows, and in fact, expanding TWRP (Tillman) could result in additional flows to the LA River. The EIR also included program-level evaluation of new facilities, including (1) construction of wastewater system facilities (wastewater conveyance); (2) recycled water facilities; and (3) and runoff system facilities and measures.[25] These programmatic level components could result in a reduction in flows to the LA River, but there are insufficient details to evaluate such

[24] https://www.lacitysan.org/san/faces/home/portal/s-lsh-es/s-lsh-es-owla/s-lsh-es-owla-r/s-lsh-es-owla-r-wirp;jsessionid=v0fjDFloyQ1iXZL6SZ6zRRBY5JjU_lIGsvsddbOmQreSCQ9MAguF!-1093801154!784227684?_afrLoop=12282949021367094&_afrWindowMode=0&_afrWindowId=null#!%40%40%3F_afrWindowId%3Dnull%26_afrLoop%3D12282949021367094%26_afrWindowMode%3D0%26_adf.ctrl-state%3Dynmvxmf6q_4

[25] IRP DEIR, p. 2-46.

impacts. The EIR explained that specific locations of program-level components have not been determined and will be subject to separate environmental review.[26] Although no Los Angeles River flow study or analysis of flows at each reach of the River was appended to the EIR, the EIR did include a table of "Average Summer Dry Weather Flow to the Los Angeles River for Each IRP Alternative" that estimates that dry weather River flows *after* implementation of various project alternatives (i.e., recycled water, reductions in dry weather runoff) will range from 71 to 101 mgd (110 to 156 cfs). The EIR also estimates that after installing smart meters and treating dry weather runoff in urban runoff plants, the net dry weather flow entering the River would range from 35 to 51 mgd and Tillman flows would range from 45.7 to 71.4 mgd.[27]

Cumulative Impacts: Proposals for increasing the amount of recycled water used by the City of Los Angeles and plans to capture dry weather flow have not crystallized to the point that it would be reasonable and practical to evaluate its cumulative impacts need not be treated as a probable future project and therefore the components of the project that could theoretically reduce flows were not included in the Hydraulic Modeling Report. In addition, the Glendale Hydraulic Model only included 2.1 cfs of "other sources" between Tujunga Av. and Arroyo Seco (see p. 15), which is much lower than summer dry weather flows estimated by the EIR for the IRP *after* project implementation.

[26] IRP DEIR, p. 2-46.
[27] IRP DEIR, p. 3.11-84.

Appendix F
Noise Modeling Data

Project: Glendale Recycled Water System Expansion

Construction Noise Impact on Sensitive Receptors

Glendale T

Parameters

Construction Hours:	8	Daytime hours (7 am to 7 pm)
	0	Evening hours (7 pm to 10 pm)
	0	Nighttime hours (10 pm to 7 am)
Leq to L10 factor	3	

				Central Avenue					Glenoaks Boulevard				
Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**
Mobilization					**94**	***91***				**73**	***70***		
Flatbed Truck	2	75	40%	10	82	78	81	10	115	61	57	60	10
Lowboy	3	85	50%	10	94	91	94	10	115	73	70	73	10
Pavement Cutting					**94**	***87***				**73**	***66***		
Pavement Saw	1	90	20%	10	94	87	90	10	115	73	66	69	10
Pick-up Truck	1	75	40%	10	79	75	78	10	115	58	54	57	10
Excavation, Pipe Laying, Backfilling					**88**	***90***				**67**	***69***		
Air Compressor	2	78	50%	10	85	82	85	10	115	64	61	64	10
Backhoe	2	80	40%	10	87	83	86	10	115	66	62	65	10
Dump Truck	2	76	20%	10	83	76	79	10	115	62	55	58	10
Excavator	2	81	40%	10	88	84	87	10	115	67	63	66	10
Forklift	1	75	10%	10	79	69	72	10	115	58	48	51	10
Generator Sets	2	81	50%	10	88	85	88	10	115	67	64	67	10
Mechanic Truck	1	75	40%	10	79	75	78	10	115	58	54	57	10
Pick-up Truck	2	75	40%	10	82	78	81	10	115	61	57	60	10
Welder	1	74	40%	10	78	74	77	10	115	57	53	56	10
Paving					**89**	***87***				**68**	***66***		
Grinding Machine	1	85	50%	10	89	86	89	10	115	68	65	68	10
Paver	1	77	50%	10	81	78	81	10	115	60	57	60	10
Roller	1	80	20%	10	84	77	80	10	115	63	56	59	10
Demobilization					**94**	***91***				**73**	***70***		
Flatbed Truck	2	75	40%	10	82	78	81	10	115	61	57	60	10
Lowboy	3	85	50%	10	94	91	94	10	115	73	70	73	10
Street Sweeper	1	82	10%	10	86	76	79	10	115	65	55	58	10

Source for Ref. Noise Levels: LA CEQA Guides, 2006 & FHWA RCNM, 2005

Project: Glendale Recycled Water System Expansion

Construction Noise Impact on Sensitive Receptors

Chevy Chase

Parameters

Construction Hours:	8	Daytime hours (7 am to 7 pm)
	0	Evening hours (7 pm to 10 pm)
	0	Nighttime hours (10 pm to 7 am)
Leq to L10 factor	3	

				Chevy Chase Drive				
Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**
Mobilization					**90**	***87***		
Flatbed Truck	2	75	40%	15	78	74	77	10
Lowboy	3	85	50%	15	90	87	90	10
Pavement Cutting					**90**	***84***		
Pavement Saw	1	90	20%	15	90	83	86	10
Pick-up Truck	1	75	40%	15	75	71	74	10
Excavation, Pipe Laying, Backfilling					**84**	***87***		
Air Compressor	2	78	50%	15	81	78	81	10
Backhoe	2	80	40%	15	83	79	82	10
Dump Truck	2	76	20%	15	79	72	75	10
Excavator	2	81	40%	15	84	80	83	10
Forklift	1	75	10%	15	75	65	68	10
Generator Sets	2	81	50%	15	84	81	84	10
Mechanic Truck	1	75	40%	15	75	71	74	10
Pick-up Truck	2	75	40%	15	78	74	77	10
Welder	1	74	40%	15	74	70	73	10
Paving					**85**	***84***		
Grinding Machine	1	85	50%	15	85	82	85	10
Paver	1	77	50%	15	77	74	77	10
Roller	1	80	20%	15	80	73	76	10
Demobilization					**90**	***88***		
Flatbed Truck	2	75	40%	15	78	74	77	10
Lowboy	3	85	50%	15	90	87	90	10
Street Sweeper	1	82	10%	15	82	72	75	10

Source for Ref. Noise Levels: LA CEQA Guides, 2006 & FHWA RCNM, 2005

Project: Glendale Recycled Water System Expansion

Construction Noise Impact on Sensitive Receptors

Chevy Oaks/Camino San Rafael

Parameters

Construction Hours:	8	Daytime hours (7 am to 7 pm)
	0	Evening hours (7 pm to 10 pm)
	0	Nighttime hours (10 pm to 7 am)
Leq to L10 factor	3	

				Chevy Oaks Drive					Camino San Rafael				
Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**
Mobilization					**88**	***85***				**86**	***83***		
Flatbed Truck	2	75	40%	20	76	72	75	10	25	74	70	73	10
Lowboy	3	85	50%	20	88	85	88	10	25	86	83	86	10
Pavement Cutting					**88**	***81***				**86**	***79***		
Pavement Saw	1	90	20%	20	88	81	84	10	25	86	79	82	10
Pick-up Truck	1	75	40%	20	73	69	72	10	25	71	67	70	10
Excavation, Pipe Laying, Backfilling					**82**	***84***				**80**	***82***		
Air Compressor	2	78	50%	20	79	76	79	10	25	77	74	77	10
Backhoe	2	80	40%	20	81	77	80	10	25	79	75	78	10
Dump Truck	2	76	20%	20	77	70	73	10	25	75	68	71	10
Excavator	2	81	40%	20	82	78	81	10	25	80	76	79	10
Forklift	1	75	10%	20	73	63	66	10	25	71	61	64	10
Generator Sets	2	81	50%	20	82	79	82	10	25	80	77	80	10
Mechanic Truck	1	75	40%	20	73	69	72	10	25	71	67	70	10
Pick-up Truck	2	75	40%	20	76	72	75	10	25	74	70	73	10
Welder	1	74	40%	20	72	68	71	10	25	70	66	69	10
Paving					**83**	***81***				**81**	***79***		
Grinding Machine	1	85	50%	20	83	80	83	10	25	81	78	81	10
Paver	1	77	50%	20	75	72	75	10	25	73	70	73	10
Roller	1	80	20%	20	78	71	74	10	25	76	69	72	10
Demobilization					**88**	***85***				**86**	***83***		
Flatbed Truck	2	75	40%	20	76	72	75	10	25	74	70	73	10
Lowboy	3	85	50%	20	88	85	88	10	25	86	83	86	10
Street Sweeper	1	82	10%	20	80	70	73	10	25	78	68	71	10

Source for Ref. Noise Levels: LA CEQA Guides, 2006 & FHWA RCNM, 2005

Project: Glendale Recycled Water System Expansion

Construction Noise Impact on Sensitive Receptors

Pump Stations

Parameters

Construction Hours:	8	Daytime hours (7 am to 7 pm)
	0	Evening hours (7 pm to 10 pm)
	0	Nighttime hours (10 pm to 7 am)
Leq to L10 factor	3	

				Pump Station 1					**Pump Station 2**					**Pump Station 3**				
Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**
Mobilization					**80**	***77***				**86**	***83***				**80**	***77***		
Flatbed Truck	2	75	40%	50	68	64	67	10	25	74	70	73	10	50	68	64	67	10
Lowboy	3	85	50%	50	80	77	80	10	25	86	83	86	10	50	80	77	80	10
Pavement Cutting					**80**	***73***				**86**	***79***				**80**	***73***		
Pavement Saw	1	90	20%	50	80	73	76	10	25	86	79	82	10	50	80	73	76	10
Pick-up Truck	1	75	40%	50	65	61	64	10	25	71	67	70	10	50	65	61	64	10
Excavation, Pipe Laying, Backfilling					**74**	***76***				**80**	***82***				**74**	***76***		
Air Compressor	2	78	50%	50	71	68	71	10	25	77	74	77	10	50	71	68	71	10
Backhoe	2	80	40%	50	73	69	72	10	25	79	75	78	10	50	73	69	72	10
Dump Truck	2	76	20%	50	69	62	65	10	25	75	68	71	10	50	69	62	65	10
Excavator	2	81	40%	50	74	70	73	10	25	80	76	79	10	50	74	70	73	10
Forklift	1	75	10%	50	65	55	58	10	25	71	61	64	10	50	65	55	58	10
Generator Sets	2	81	50%	50	74	71	74	10	25	80	77	80	10	50	74	71	74	10
Mechanic Truck	1	75	40%	50	65	61	64	10	25	71	67	70	10	50	65	61	64	10
Pick-up Truck	2	75	40%	50	68	64	67	10	25	74	70	73	10	50	68	64	67	10
Welder	1	74	40%	50	64	60	63	10	25	70	66	69	10	50	64	60	63	10
Paving					**75**	***73***				**81**	***79***				**75**	***73***		
Grinding Machine	1	85	50%	50	75	72	75	10	25	81	78	81	10	50	75	72	75	10
Paver	1	77	50%	50	67	64	67	10	25	73	70	73	10	50	67	64	67	10
Roller	1	80	20%	50	70	63	66	10	25	76	69	72	10	50	70	63	66	10
Demobilization					**80**	***77***				**86**	***83***				**80**	***77***		
Flatbed Truck	2	75	40%	50	68	64	67	10	25	74	70	73	10	50	68	64	67	10
Lowboy	3	85	50%	50	80	77	80	10	25	86	83	86	10	50	80	77	80	10
Street Sweeper	1	82	10%	50	72	62	65	10	25	78	68	71	10	50	72	62	65	10
Maximum Pipe Installation						***77***					***83***					***77***		
Pump Stations					**72**	***73***				**78**	***79***				**72**	***73***		
Dump Truck	1	76	20%	50	66	59	62	10	25	72	65	68	10	50	66	59	62	10
Excavator	1	81	40%	50	71	67	70	10	25	77	73	76	10	50	71	67	70	10
Pick-up Truck	1	75	40%	50	65	61	64	10	25	71	67	70	10	50	65	61	64	10
Cranes	1	81	40%	50	71	67	70	10	25	77	73	76	10	50	71	67	70	10
Cement Truck	2	79	40%	50	72	68	71	10	25	78	74	77	10	50	72	68	71	10
Concurrent Pipe Installation & Pump Station Construction						***78***					***84***					***78***		

Source for Ref. Noise Levels: LA CEQA Guides, 2006 & FHWA RCNM, 2005

Appendix G

Glendale's Wastewater Change Petition

glendale california

City of Glendale
Glendale Water & Power
Administration

141 N. Glendale Ave., Level 4
Glendale, CA 91206-4975
Tel 818.548.2107 Fax 818.552.2852
www.glendaleca.gov

September 14, 2016

Mitchell Moody
Division of Water Rights
State Water Resources Control Board
P.O. Box 2000
Sacramento, CA 95812-2000

Subject: City of Glendale Water Division Petition for additional Recycled Water from Los Angeles Glendale Water Reclamation Plant (LAGWRP)

Dear Mr. Moody:

Enclosed are the following documents relative to a Petition for Change (Petition) under **Los Angeles Glendale Water Reclamation Plant (LAGWRP):**

1. Petition for Water Rights Change.
2. Environmental Information for Petitions.
3. Attachments 1-7
4. CD with Copy of Pasadena's Draft Environmental Report and Glendale Water Master Plan
5. $1000 and $850 checks payable to SWRCB and CDFWS, Respectively.

Glendale and Los Angeles are joint and equal partners in the ownership of the reclaimed water produced by the LAGWRP and each City has rights to one-half of the reclaimed water before its lawful discharge into the Los Angeles River (see attachment 7).

Glendale Water and Power (GWP) Water Division is filing this Petition with the Division of Water Rights to request additional delivery of approximately 3500 acre-feet per year (AFY) of Title 22 disinfected, tertiary-treated recycled water for irrigation in the cities of Glendale and Pasadena.

We look forward to working with you and your staff during the review and approval process for this Petition for Change.

Stephen M. Zurn
General Manager - GWP

SMZ/MED:cl

Attachments

City Of Glendale

REQUEST FOR DEMAND

To: **Director of Finance**

Date: **September 13, 2016**

Vendor Info: ☐ Regular ☒ One Time ☐ Employee

Division: **GWP Water**

Vendor #: 149559 Address #

Contact: Tracy Wassif Phone Ext: 3972

Name: State of California

Address: State Water Resources Control Board
Division of Water Rights
P.O. Box 2000
Sacramento, CA 95812-2000

t:

ailed
lor.

Note: 2 RFDs attached for 2 checks that need to be issued:

1) Department of Fish & Wildlife - $850

2) Division of Water Rights -$1000

* Certified Mail *

Explanation of Request:

Payment for the fee application fee to Division of Watei ... . This application is to file for water rights to deliver recycled v ... eclamation Plant (LAGWRP) to the City of Pasadena Water and P(... ity of Glendale. The unused treated water from LAGWRP is (... River. Due to this change in discharge amount, the City must appl)

Account	Fund	Org	Program	Sub Class / FERC	Project	Activity ID	Invoice Num.	Amount	A/P USE ONLY
44760					11799	UW031		1,000.00	

Division Head 9-16-16
Date

Note: *All necessary supporting data and documents must be attached to this request.*

C-253 (REV. 4/03/03)

City Of Glendale

REQUEST FOR DEMAND

To: **Director of Finance**

Date: **September 13, 2016**

Division: **GWP Water**

Vendor Info: ☐ Regular ☒ One Time ☐ Employee

Vendor #: 101838 Address #:

Contact: Tracy Wassif Phone Ext: 3972

Name: State of California

Address: State of California
Department of Fish and Wildlife
P.O. Box 2000
Sacramento, CA 95812-2000

Amount: **$850.00**

Disposition of Completed Warrant:

All warrants will be mailed directly to the vendor.

Explanation of Request:

Payment for the fee to the Department of Fish and Wildlife for the water rights petition application to the State Water Resources Control Board - Division of Water Rights. This application is to file for water rights to deliver recycled water from the Los Angeles/Glendale Water Reclamation Plant (LAGWRP) to the City of Pasadena Water and Power and to other customers throughout the City of Glendale. The unused treated water from LAGWRP is currently being discharged to the Los Angeles River. Due to this change in discharge amount, the City must apply for water rights.

Account	Fund	Org	Program	Sub Class / F E R C	Project	Activity ID	Invoice Num.	Amount	A/P USE ONLY
44760					11799	UW031		850.00	

Division Head: [signature] Date: 9-16-16

Note: *All necessary supporting data and documents must be attached to this request.*

C-253 (REV. 4/03/03)

Please indicate County where your project is located here:

Los Angeles

MAIL FORM AND ATTACHMENTS TO:
State Water Resources Control Board
DIVISION OF WATER RIGHTS
P.O. Box 2000, Sacramento, CA 95812-2000
Tel: (916) 341-5300 Fax: (916) 341-5400
http://www.waterboards.ca.gov/waterrights

PETITION FOR CHANGE

Separate petitions are required for each water right. Mark all areas that apply to your proposed change(s). Incomplete forms may not be accepted. Location and area information must be provided on maps in accordance with established requirements. (Cal. Code Regs., tit. 23, § 715 et seq.) Provide attachments if necessary.

- ☐ **Point of Diversion** Wat. Code, § 1701
- ☒ **Point of Rediversion** Cal. Code Regs., tit. 23, § 791(e)
- ☒ **Place of Use** Wat. Code, § 1701
- ☐ **Purpose of Use** Wat. Code, § 1701
- ☐ **Distribution of Storage** Cal. Code Regs., tit. 23, § 791(e)
- ☐ **Temporary Urgency** Wat. Code, § 1435
- ☐ **Instream Flow Dedication** Wat. Code, § 1707
- ☒ **Waste Water** Wat. Code, § 1211
- ☐ **Split** Cal. Code Regs., tit. 23, § 836
- ☐ **Terms or Conditions** Cal. Code Regs., tit. 23, § 791(e)
- ☐ **Other**

Application ______ Permit ______ License ______ Statement ______

I (we) hereby petition for change(s) noted above and described as follows:

Point of Diversion or Rediversion – Provide source name and identify points using both Public Land Survey System descriptions to ¼-¼ level and California Coordinate System (NAD 83).

Present: Sec. 0, T.1S, R.14W SBB&B. 6,478,420 E 1,872,402 N (NAD 83 Zone 5). See map in Attachment 4.

Proposed: Retain Existing: Present Point of Discharge. Add: Discharge to Proposed Place of Use as shown in Attachment 6.

Place of Use – Identify area using Public Land Survey System descriptions to ¼-¼ level; for irrigation, list number of acres irrigated.

Present: Several approved recycled water use sites throughout the City of Glendale as shown in Attachment 2. Excess recycled water discharged to Los Angeles River (Map shown in Attachment 4).

Proposed: Various recycled water use sites in the Cities of Pasadena and Glendale as shown in Attachments 2 and 6.

Purpose of Use

Present: Discharged to LA River, and irrigation throughout the City of Glendale.

Proposed: Irrigation for the City of Pasadena and additional Glendale sites.

Split

Provide the names, addresses, and phone numbers for all proposed water right holders.

Not applicable.

In addition, provide a separate sheet with a table describing how the water right will be split between the water right holders: for each party list amount by direct diversion and/or storage, season of diversion, maximum annual amount, maximum diversion to offstream storage, point(s) of diversion, place(s) of use, and purpose(s) of use. Maps showing the point(s) of diversion and place of use for each party should be provided.

Distribution of Storage

Present: Not applicable.

Proposed: Not applicable.

gency

ary urgency change will be effective from Not applicable. to Not applicable.

an attachment that describes the urgent need that is the basis of the temporary urgency change and whether the ge will result in injury to any lawful user of water or have unreasonable effects on fish, wildlife or instream uses.

Instream Flow Dedication – Provide source name and identify points using both Public Land Survey System descriptions to ¼-¼ level and California Coordinate System (NAD 83).

Upstream Location: Not applicable.

Downstream Location: Not applicable.

List the quantities dedicated to instream flow in either: ☐ cubic feet per second or ☐ gallons per day:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Will the dedicated flow be diverted for consumptive use at a downstream location? ○ Yes ○ No

If yes, provide the source name, location coordinates, and the quantities of flow that will be diverted from the stream.

Waste Water

If applicable, provide the reduction in amount of treated waste water discharged in cubic feet per second.

Will this change involve water provided by a water service contract which prohibits your exclusive right to this treated waste water? ○ Yes ◉ No

Will any legal user of the treated waste water discharged be affected? ○ Yes ◉ No

General Information – For all Petitions, provide the following information, if applicable to your proposed change(s).

Will any current Point of Diversion, Point of Storage, or Place of Use be abandoned? ○ Yes ◉ No

I (we) have access to the proposed point of diversion or control the proposed place of use by virtue of:

☒ ownership ☐ lease ☐ verbal agreement ☐ written agreement

If by lease or agreement, state name and address of person(s) from whom access has been obtained.

Amendment No. 1 Joint Powers Agreement Between the City of Los Angeles and the City of Glendale to Provide for Operation and Maintenance of the Los Angeles-Glendale Water Reclamation Plant is shown in Attachment 7.

Give name and address of any person(s) taking water from the stream between the present point of diversion or rediversion and the proposed point of diversion or rediversion, as well as any other person(s) known to you who may be affected by the proposed change.

None.

All Right Holders Must Sign This Form: I (we) declare under penalty of perjury that this change does not involve an increase in the amount of the appropriation or the season of diversion, and that the above is true and correct to the best of my (our) knowledge and belief. Dated 9/14/2016 at Glendale.

Right Holder or Authorized Agent Signature

Right Holder or Authorized Agent Signature

NOTE: All petitions must be accompanied by:

(1) the form Environmental Information for Petitions, including required attachments, available at: http://www.waterboards.ca.gov/waterrights/publications_forms/forms/docs/pet_info.pdf

(2) Division of Water Rights fee, per the Water Rights Fee Schedule, available at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/fees/

(3) Department of Fish and Wildlife fee of $850 (Pub. Resources Code, § 10005)

State of California
State Water Resources Control Board
DIVISION OF WATER RIGHTS
P.O. Box 2000, Sacramento, CA 95812-2000
Tel: (916) 341-5300 Fax: (916) 341-5400
http://www.waterboards.ca.gov/waterrights

ENVIRONMENTAL INFORMATION FOR PETITIONS

This form is required for all petitions.

Before the State Water Resources Control Board (State Water Board) can approve a petition, the State Water Board must consider the information contained in an environmental document prepared in compliance with the California Environmental Quality Act (CEQA). This form is not a CEQA document. If a CEQA document has not yet been prepared, a determination must be made of who is responsible for its preparation. As the petitioner, you are responsible for all costs associated with the environmental evaluation and preparation of the required CEQA documents. Please answer the following questions to the best of your ability and submit any studies that have been conducted regarding the environmental evaluation of your project. If you need more space to completely answer the questions, please number and attach additional sheets.

DESCRIPTION OF PROPOSED CHANGES OR WORK REMAINING TO BE COMPLETED

For a petition for change, provide a description of the proposed changes to your project including, but not limited to, type of construction activity, structures existing or to be built, area to be graded or excavated, increase in water diversion and use (up to the amount authorized by the permit), changes in land use, and project operational changes, including changes in how the water will be used. For a petition for extension of time, provide a description of what work has been completed and what remains to be done. Include in your description any of the above elements that will occur during the requested extension period.

The City of Glendale proposes to deliver up to 3,100 acre-feet per year of Title 22 disinfected, tertiary treated recycled water to the City of Pasadena for irrigation. The Pasadena Non-Potable Water Project is proposed to convey recycled water from the Los Angeles-Glendale Water Reclamation Plant (LAGWRP) to potential customers through a pump stations, a transmission pipeline, and distribution mains. The City of Pasadena is responsible for funding and phased construction of the project. The first phase is estimated to be operational in 2018 and the last phase (Phase VI) to be operational in 2028.

For additional information on the Pasadena Non-Potable Water Project, please refer to the draft and final Environmental Impact Reports (EIR) attached to this submittal (CD).

The City of Glendale also plans to expand their recycled water system to connect 9 additional customers with an approximate demand of 400 ac-ft (City) is entitle to 50 percent of the effluent from the LAGWRP, which is a 20 million gallons per day (mgd) facility co-owned by the City and the City of Los Angeles. The City's existing recycled water system consists of approximately 22 miles of "purple also plans to expand their recycled water system to include 9 additional customers with an estimated demand of 331 acre-feet per year, through four expansions segments which are identified in Attachment 2 of this submittal.

Insert the attachment number here, if applicable: 1-2,5

Coordination with Regional Water Quality Control Board

<u>For change petitions only</u>, you must request consultation with the Regional Water Quality Control Board regarding the potential effects of your proposed change on water quality and other instream beneficial uses. (Cal. Code Regs., tit. 23, § 794.) In order to determine the appropriate office for consultation, see: http://www.waterboards.ca.gov/waterboards_map.shtml. Provide the date you submitted your request for consultation here, then provide the following information.

Date of Request: 6/28/2016

Will your project, during construction or operation, (1) generate waste or wastewater containing such things as sewage, industrial chemicals, metals, or agricultural chemicals, or (2) cause erosion, turbidity or sedimentation? ○ Yes ◉ No

Will a waste discharge permit be required for the project? ○ Yes ◉ No

If necessary, provide additional information below:

Construction of the project may generate waste, as well as cause erosion, turbidity, or sedimentation. The final EIR (included in Attachment 5) lists all potential impacts and determines mitigation measures to ensure the impact is less than significant with mitigation.

Insert the attachment number here, if applicable: 5

Local Permits

<u>For temporary transfers only</u>, you must contact the board of supervisors for the county(ies) both for where you currently store or use water and where you propose to transfer the water. (Wat. Code § 1726.) Provide the date you submitted your request for consultation here.

Date of Contact: Not applicable.

<u>For change petitions only</u>, you should contact your local planning or public works department and provide the information below.

Person Contacted: Erik Krause
Date of Contact: 6/14/2016
Department: Community Development
Phone Number: (818) 937-8156
County Zoning Designation:

Are any county permits required for your project? If yes, indicate type below. ◉ Yes ○ No

- ☐ Grading Permit
- ☐ Use Permit
- ☐ Watercourse
- ☐ Obstruction Permit
- ☐ Change of Zoning
- ☐ General Plan Change
- ☒ Other (explain below)

If applicable, have you obtained any of the permits listed above? If yes, provide copies. ○ Yes ◉ No

If necessary, provide additional information below:

The following approvals from Los Angeles County are required:
1) LA County Roadway Encroachment Permit,
2) Flood Control Crossing Easement or Lease Agreement,
3) Flood Control Permit for Easement Acquisition, and
4) Concurrence with Construction Staging and Traffic Management Plan

Insert the attachment number here, if applicable:

Federal and State Permits

Check any additional agencies that may require permits or other approvals for your project:

- [x] Regional Water Quality Control Board
- [x] Department of Fish and Game
- [ ] Dept of Water Resources, Division of Safety of Dams
- [ ] California Coastal Commission
- [ ] State Reclamation Board
- [x] U.S. Army Corps of Engineers
- [ ] U.S. Forest Service
- [ ] Bureau of Land Management
- [ ] Federal Energy Regulatory Commission
- [ ] Natural Resources Conservation Service

Have you obtained any of the permits listed above? If yes, provide copies. ○ Yes ◉ No

For each agency from which a permit is required, provide the following information:

Agency	Permit Type	Person(s) Contacted	Contact Date	Phone Number
RWQCB	CWA Sec 401 WQ			
CA DF&W	Section 1602			
US Army Corp Engineers	NWP 12			

If necessary, provide additional information below:

Not applicable.

Insert the attachment number here, if applicable:

Construction or Grading Activity

Does the project involve any construction or grading-related activity that has significantly altered or would significantly alter the bed, bank or riparian habitat of any stream or lake? ○ Yes ◉ No

If necessary, provide additional information below:

Not applicable.

Insert the attachment number here, if applicable:

Archeology

Has an archeological report been prepared for this project? If yes, provide a copy. ○ Yes ◉ No

Will another public agency be preparing an archeological report? ◉ Yes ○ No

Do you know of any archeological or historic sites in the area? If yes, explain below. ◉ Yes ○ No

If necessary, provide additional information below:

One archaeological site (CA-LAN-26) was discovered in 1938 during the excavation of the existing Sheldon potable water reservoir. The subsurface study identified 2 anomalies and one target of interest. Additional excavations will be performed before construction of Phase 1 and an archaeological monitor will oversee the construction and prepare a final report with the conclusions of the observation.

Insert the attachment number here, if applicable: 5

Photographs

For all petitions other than time extensions, attach complete sets of color photographs, clearly dated and labeled, showing the vegetation that exists at the following three locations:

- [x] Along the stream channel immediately downstream from each point of diversion
- [x] Along the stream channel immediately upstream from each point of diversion
- [x] At the place where water subject to this water right will be used

Maps

For all petitions other than time extensions, attach maps labeled in accordance with the regulations showing all applicable features, both present and proposed, including but not limited to: point of diversion, point of rediversion, distribution of storage reservoirs, point of discharge of treated wastewater, place of use, and location of instream flow dedication reach. (Cal. Code Regs., tit. 23, §§ 715 et seq., 794.)

Pursuant to California Code of Regulations, title 23, section 794, petitions for change submitted without maps may not be accepted.

All Water Right Holders Must Sign This Form:
I (we) hereby certify that the statements I (we) have furnished above and in the attachments are complete to the best of my (our) ability and that the facts, statements, and information presented are true and correct to the best of my (our) knowledge. Dated 9/14/2016 at Glendale .

Water Right Holder or Authorized Agent Signature

Water Right Holder or Authorized Agent Signature

NOTE:

- **Petitions for Change may not be accepted unless you include proof that a copy of the petition was served on the Department of Fish and Game. (Cal. Code Regs., tit. 23, § 794.)**
- **Petitions for Temporary Transfer may not be accepted unless you include proof that a copy of the petition was served on the Department of Fish and Game and the board of supervisors for the county(ies) where you currently store or use water and the county(ies) where you propose to transfer the water. (Wat. Code § 1726.)**

Attachment 1 – Project Information

Pasadena Non-Potable Water Project Summary

The City of Glendale Water and Power (GWP) proposes to deliver up to 3,100 acre-feet per year (AFY) of Title 22 disinfected, tertiary-treated recycled water to the City of Pasadena Water and Power (PWP) for landscape irrigation, cooling, and other non-potable uses. PWP is responsible for this project's construction. The project will be constructed in six phases including new non-potable water infrastructure of pipelines, storage reservoirs, pressure reducing stations, and pump stations. Phase I which approximately 700 afy of demand is estimated to be operational in 2018 with the last phase, Phase VI, operational in 2028 to serve a total of 51 customers. A map of the proposed phased project can be viewed below. More information regarding this project may be found in the Environmental Impact Report (EIR). The draft and final versions of the EIR are included (see Attachment 5).

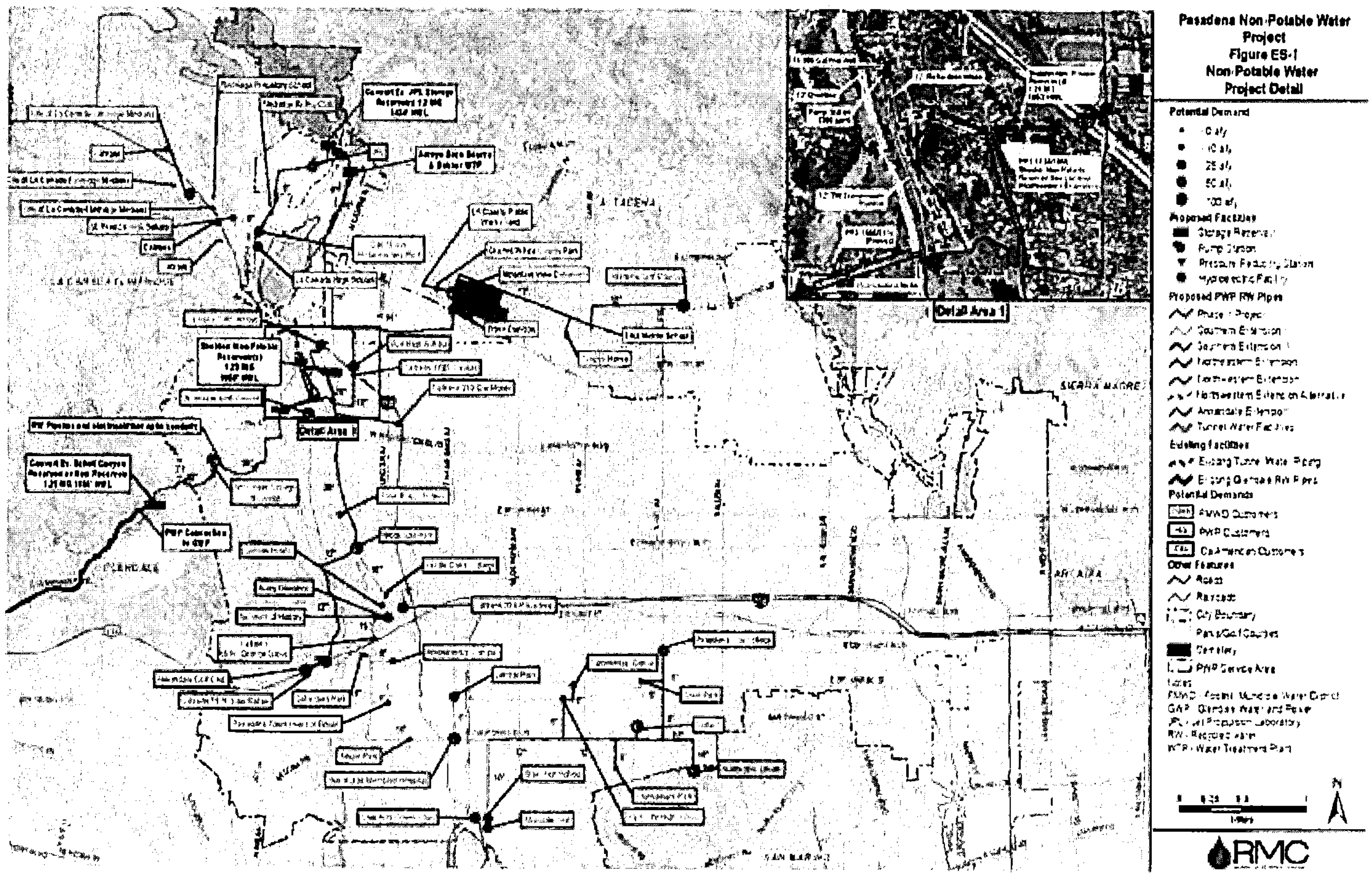


Figure 1: PWP Non-Potable Water Project Map

Attachment 2- GWP Recycled Water Overview and Planned Projects

<u>GWP Recycled Water System Overview</u>

The City of Glendale's existing recycled water system consists of approximately 22 miles of "purple pipe," five storage facilities, and six pump stations as depicted in the Figure 1 below. The system has been delivering water to many schools, parks, street medians, golf courses, cemeteries, and landfills. This system has also provided recycled water for landfill operation, soil compaction, street sweeping, and restroom flushing in high-rise commercial buildings. The City's recycled water system was built with the intent of future expansion throughout the City and to deliver water to the City of Pasadena.

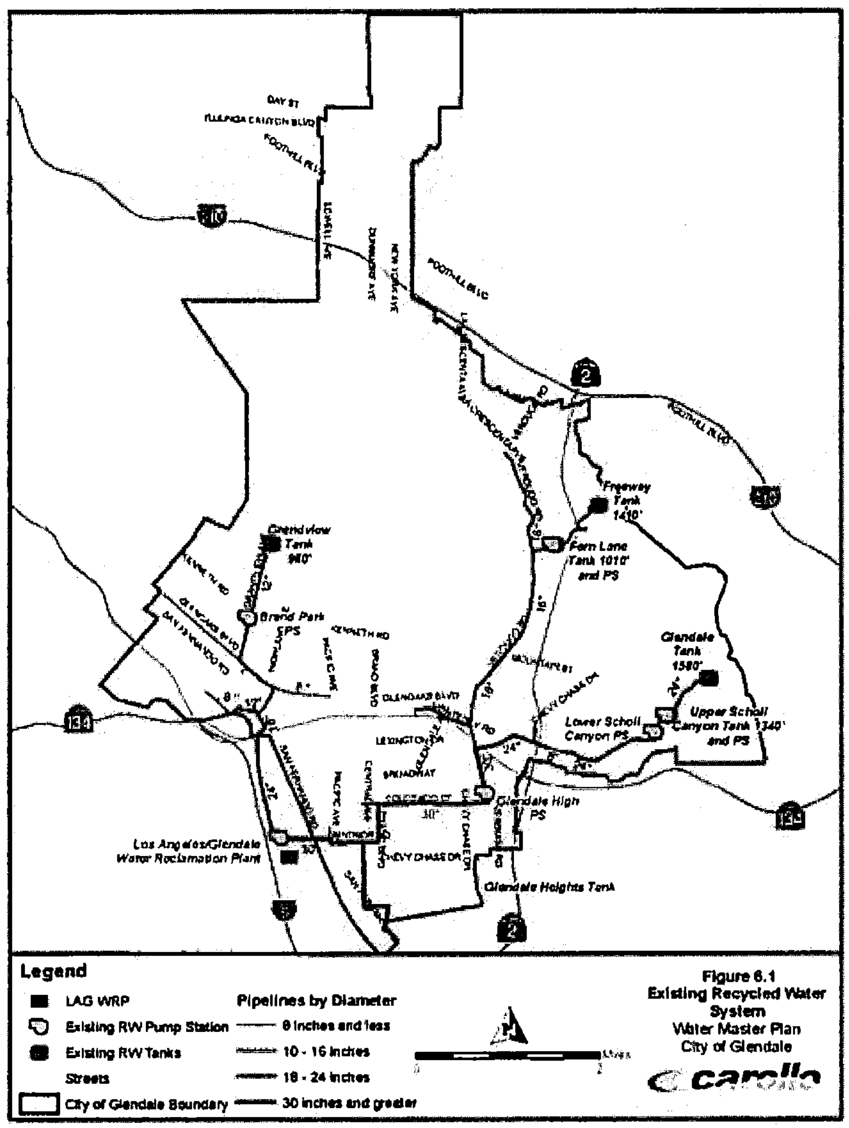


Figure 2: Existing Recycled Water System

GWP Recycled Water System Expansion

As indicated in the City's 2016 Water Master Plan (Attachment 5), the City plans to expand their recycled water system to include nine additional customers with a total estimated demand of 3,431 afy including the delivery of 3,100 afy to the City of Pasadena Water and Power (PWP). Other than the connection to the City of Pasadena, which will be installed, owned and funded by Pasadena, the City has identified four recycled water expansion segments listed below. A map illustrating these four expansion segments may be seen in Figure 3. More information can be found in the 2016 Glendale Water Master Plan, provided as attachment 5 (CD).

Table 1: GWP Recycled Water Expansion Segments

Expansion Segment	Average Annual Potable Water Conversion Demand (2) (afy)
Glendale Unified School District	56
Glendale Tee	50
Chevy Chase Country Club	100
Camino San Rafael Homes	125
Total	**331**
Pipeline to PWP	3,100
Total with Pipeline to PWP	**3,431**

Notes:

(1) Potable water conversion demands are based on City staff's estimates of existing potable users converting to recycled water.

(2) Pipeline will be installed, funded, and owned by the City of Pasadena.

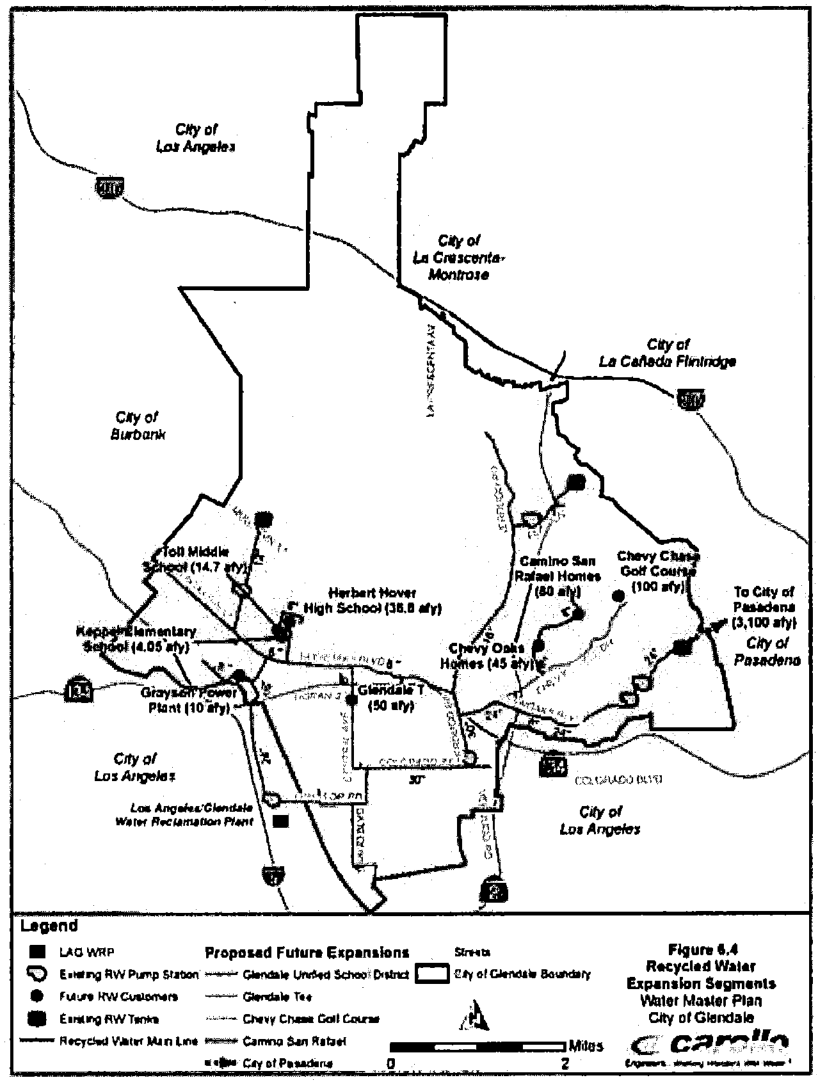


Figure 3: Recycled Water System Expansion

In the 2013/2014 fiscal year, the City served 45 recycled water users with a combination demand of 2,066 ac-ft. A list of the City's users and their monthly demand is provided in Attachment 3.

Attachment 3- GWP Recycled Water Usage FY2014-2015

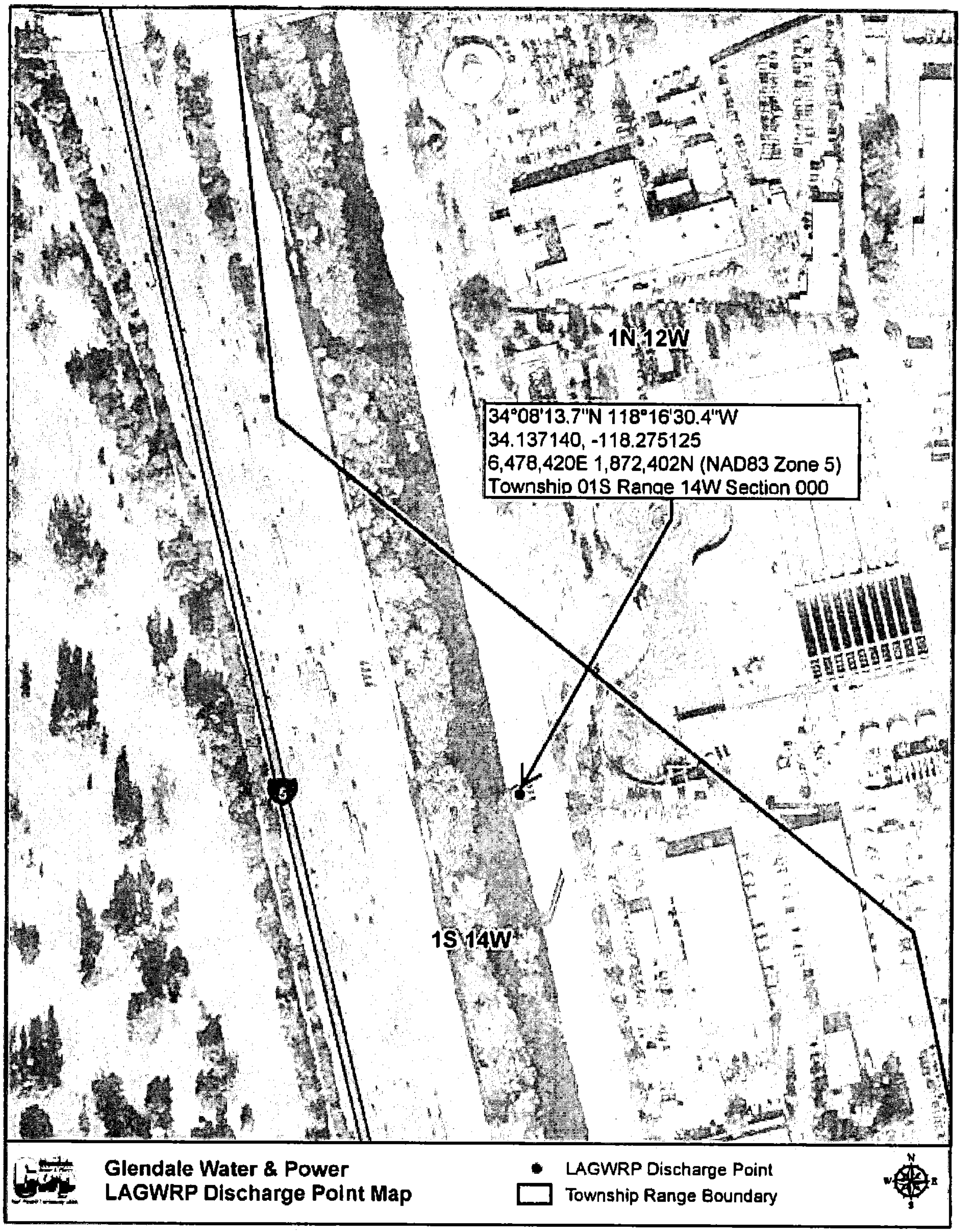
GLENDALE RECYCLED WATER ACCOUNTS
FISCAL YEAR 2013-14

No.	PROJECT	ADDRESS	ACCOUNT NO	METER NO	CONSUMPTION (ACRE-FEET) Jul 13	Aug 13	Sep 13	Oct 13	Nov 13	Dec 13	Jan 14	Feb 14	Mar 14	Apr 14	May 14	Jun 14	TOTAL
		FOREST LAWN PROJECT (A - 1)															
1	City of Glendale	1600 S Brand Boulevard	2024195000	51999		0.59		0.74	0.67	0.67	0.67	1.18		0.33		0.61	5.46
[redacted]	Forest Lawn Memorial Park	1712 S Glendale Avenue	3119201000	49206		54.31	6.60	96.41	90.50	43.43	63.81	85.19	9.83	18.57	55.33	52.59	576.56
[redacted]	Forest Lawn Memorial Park	3690 San Fernando Road	5000922200	87936	0.02	0.03	0.03	0.02	0.01	0.01	0.02	0.03	0.01	0.01	0.02	0.02	0.24
4	Silver Crest Homes	316 W Windsor Road	5000120200	72329	0.48		0.38		0.23		0.36		0.33		0.32		2.10
5	Cerritos Elementary School	120 E Cerritos Avenue	5000684000	80038	0.66	0.66	0.56	0.55	0.47	0.33	0.74	0.50	0.11	0.15	0.51	0.59	5.83
6	Cerritos Elementary School	1715 S Glendale Avenue	5000827700	81934	0.06	0.09	0.09	0.09	0.05	0.04	0.07	0.10	0.02	0.02	0.07	0.10	0.81
7	Cerritos School Park - Parks & Recreation	3690 San Fernando Road	5000805600	81913	0.28	0.29	0.31	0.25	0.21	0.17	0.24	0.39	0.07	0.12	0.24	0.29	2.89
8	Edison Elementary & Pacific Park	501 Riverdale Drive	5000613400	86028			4.01	3.25			1.90		1.13		1.40		16.69
			Sub-Total		1.51	55.96	11.98	101.31	92.15	44.65	67.83	87.39	11.50	19.19	57.89	54.22	605.57
		POWER PLANT PROJECT (A - 2)															
[redacted]	Caltrans	943 W Doran Street	2251676400	54722	4.61	2.48	3.77	2.46	0.36	0.55	1.12	1.53	1.83	0.34	1.44	1.41	21.89
[redacted]	Grayson Power Plant - GWP	800 Air Way	5000563000	63383	11.37	28.81	76.34	34.38	14.48	9.92	22.05	20.71	13.99	7.83	14.36	12.54	216.81
11	Public Works - Parkway Irrigation	-	-	-	0.17	0.22	0.12	0.08	0.07	0.06	0.02	0.06	0.06	0.04	0.07	0.12	1.08
12	GLENDALE WATER & POWER-UOC	800 Air Way	5001222700	91871	0.15	0.07	0.11	0.14	0.16	0.32	0.49	0.32	0.31	0.03	0.07	0.08	2.25
			Sub-Total		16.30	31.58	80.36	37.06	15.08	10.84	23.68	22.62	16.19	8.24	15.94	14.15	242.03
		BRAND PARK PROJECT (A - 3)															
13	City of Glendale	2008 W Glenoaks Boulevard	1236667000	45544	0.86		1.39		1.11		1.01		0.38		0.40		5.12
14	City of Glendale	1830 W Glenoaks Boulevard (at Irving)	1238225000	52435	0.72		0.66		0.62		0.69		0.38		0.40		3.49
15	Parks and Recreation	1108 W Glenoaks Boulevard	1251301000	49328	0.82		0.98		1.24	1.24	2.76	1.24		0.50	0.34		9.13
16	Parks and Recreation	978 W Glenoaks Boulevard	1252070000	40958	0.67		0.70		0.63		0.72			0.46	0.57		3.75
17	Glenoaks Medians	720 W Glenoaks Boulevard	1257622000	40802	1.00		0.59		0.60		0.68			0.46	0.53		3.86
18	Glenoaks Medians	618 W Glenoaks Boulevard	1258196000	51516	0.79		0.65		0.47	0.47	1.09	0.47		0.40		0.46	4.80
19	Glenoaks Medians	532 W Glenoaks Boulevard	1258304000	54717	0.62		0.35		0.36	0.36	0.76	0.36		0.25		0.34	3.40
20	City of Glendale	1628 W Glenoaks Boulevard	2245370000	45017		1.10		0.49		0.78	0.78	0.78	1.22	0.53		0.79	6.46
21	City of Glendale	1400 W Glenoaks Boulevard	2245286000	40409	0.64	1.15		1.91		1.16	1.16	1.16	1.91		0.39		8.58
22	Brand Park	1700 W Mountain Street	3109177500	54519	5.46	6.36	5.45	5.45	6.13	2.62	4.39	5.05	2.03	1.54	3.74	4.79	53.01
23	Pelanconi Park (2 - meters)	905 Cleveland Road	3109207300	54718 54719	1.47	1.34	0.85	1.37	2.24	0.88	1.37	1.70	0.51	0.49	1.05	1.50	14.96
24	Grandview Memorial Park (3 - meters)	1341 Glenwood Road	3219120004	53124	4.15	2.97	4.26	0.63	0.00	2.29	3.35	2.90	2.29	0.00		0.92	24.35
			5001787201	91912	1.12	1.26	1.38	0.21	0.00	0.80	1.16	1.00	0.80	0.00		0.30	8.02
25	Walt Disney - L	1101 Flower Street	5000672000	87398	0.59	0.88	0.90	0.95	1.00	1.00	2.25	0.53	0.42	0.39	0.43	0.74	10.09
26	Walt Disney - L	1201 Flower Street	5000672200	87408								0.44					0.44
27	City of Glendale (Railroad Irrigation)	5775 San Fernando Road	5000936500	86076	0.06		1.08	0.55	0.52	0.27	0.39	0.44	0.40	0.17	0.22	0.26	4.40
28	City of Glendale Traffic-Trans	907 Flower Street	5001200000	91938	0.24	0.38		0.35	0.15	0.29	0.29		0.30	0.13	0.13	0.16	2.61
29	Walt Disney Co.	900 Grand Central Ave	5001828600	35753058	0.13	0.17	0.14	0.27	0.28	0.28	0.70	0.39	0.33	0.44	0.47	0.81	4.42
30	Walt Disney Co.	1200 Grand Central Ave	5001825400	35740154	1.48	2.44	1.97	1.57	0.28	0.28	0.79	0.55	1.16	1.37	1.67	2.15	15.71
31	City of Glendale	600 Kellogg Ave	3309100500	40171902		6.76	4.62	14.53	3.61	3.61	7.32	6.74	4.45	4.58	5.52	0.28	70.02
32	City of Glendale	700 Flower St.	5001589300	40512122		0.13	0.44	0.71	0.09	0.09	0.09	0.25	0.17	0.06	0.03	0.55	2.62
	Less Makeup Water (Potable)	To Grandview RW Tank	[illegible]			0.06											0.06
			Sub-Total		21.37	25.13	26.41	28.29	19.33	16.43	31.73	24.02	16.79	11.78	15.92	22.06	259.25
		(Sum A-1, A-2, and A-3)	Acre-Feet		39.17	112.67	68.74	166.66	126.56	71.92	123.24	134.02	44.47	39.21	89.75	90.42	1,106.85
		(A - 1)	GRCL - 1 MWD		1.51	55.96	11.98	101.31	92.15	44.65	67.83	87.39	11.50	19.19	57.89	54.22	605.57
		(B)	GRCL - 2 MWD		95.24	91.43	117.81	121.74	76.25	37.71	79.69	77.14	65.06	50.96	72.56	99.34	984.93
		(A - 3)	GRCL - 3 MWD		21.37	25.19	26.41	28.29	19.33	16.43	31.73	24.02	16.79	11.78	15.92	22.06	259.31
		[(B) + (A - 3)]	GRCL - 2 & 3 MWD		116.60	116.63	144.22	150.03	95.58	54.14	111.43	101.16	81.84	62.73	88.49	121.40	1,244.24
			Total GRLCs		118.11	172.58	156.20	251.34	187.73	98.79	179.26	188.54	93.34	81.93	146.38	175.61	1,849.81

GLENDALE RECYCLED WATER ACCOUNTS
FISCAL YEAR 2013-14

No.	PROJECT	ADDRESS	ACCOUNT NUMBER	Meter No.	CONSUMPTION (ACRE-FEET)												TOTAL
		VERDUGO SCHOOL PROJECT (B)			Jul 13	Aug 13	Sep 13	Oct 13	Nov 13	Dec 13	Jan 14	Feb 14	Mar 14	Apr 14	May 14	Jun 14	
33	Parks & Recreation	615 E Colorado Street	31492605-00	61549	0.67	0.59	0.50	0.14	0.13	0.13	0.26	0.25	0.20	0.02	0.13	0.14	3.17
34	Colorado Street Irrigation	1311 E Colorado Street	10512470-00	70907	0.06		0.06		0.18		0.13		0.11		0.07		0.63
35	City of Glendale (Sidewalk Irrigation)	1401 E Colorado Street	10511248-00	70908	0.06		0.17		0.20		0.24		0.20				0.87
36	Caltrans (2 - meters)	1970 E Glenoaks Boulevard (E&W/S (2)	10641215-00	44497 52109					2.64		0.25		0.49		0.44		4.02
37	Caltrans	406 N Verdugo Road (at Chevy Chase Dr)	10915398-00	652086	15.30		14.69		4.80		4.50		2.44		2.32		43.96
38	Caltrans	709 Howard Street (at Monterey Road)	11621385-00	43596	2.69		4.92		5.59		2.76		3.84		1.45		21.25
39	Parks & Recreation	741 S Brand Boulevard (Median)	10228900-00	52431	0.69		1.00		0.97		0.79		0.46		0.41		4.32
40	Caltrans (206319350)	2000 E Chevy Chase Drive (at Harvey)	20413415-00	41638													0.00
41	Montecito Park	2978 N Verdugo Road (at Sparr)	21026940-01	53396		0.07		0.04		0.04	0.04	0.07	0.04	0.01		0.02	0.36
42	Parks & Recreation	3220 N Verdugo Road/Median/ La Crescenta Avenue *CIPP	21130300-00	53121		0.80		1.29		1.35	1.35	2.67	1.35	0.86		1.31	10.97
43	Parks & Recreation	3021 N Verdugo/Canada Median	21452650-00	53107		0.17		0.16		0.16	0.16	0.27	0.16	0.04		0.10	1.21
44	Parks & Recreation	Verdugo/Canada (South) Overpass	21415900-01	53252						0.00	0.00	0.00	0.00				0.00
45	Parque Vaquero	1265 N Verdugo Road	21680110-00	61564	0.25	0.34		0.25		0.13	0.13	0.29	0.13	0.05		0.04	1.62
46	Parks & Recreation	701 N Glendale Avenue (Median)	21688594-00	53133		0.71		0.40		0.44	0.44	0.78	0.44	0.20		0.58	4.18
47	Civic Auditorium	1401 N Verdugo Road	31091125-00	51638	0.47	0.88	0.57	0.48	0.60	0.40	0.61	0.74	0.29	0.14	0.31	0.43	5.91
[redacted]	Sports Complex	2200 Fern Lane	31091370-00	71345	2.58	3.10	2.78	2.35	2.05	0.74	0.77	1.74	0.70	0.54	2.00	2.39	21.76
49	Adult Recreation Center	201 E Colorado Street	31092175-00	51834	0.91	0.97	1.15	0.89	1.19	0.43	0.51	0.70	0.13	0.18	0.45	0.71	8.23
50	Glenoaks Park	2531 E Glenoaks Boulevard	31092325-00	53119	0.53	0.69	0.58	0.74	0.82	0.42	0.44	0.67	0.30	0.44	0.58	0.37	7.01
51	Parks & Recreation - Scholl Canyon Park / Lower Scholl Canyon PS	2849 E Glenoaks Boulevard	31092375-00	52444	1.28	1.38	1.29	1.29	0.77	0.51	0.59	1.22	1.16		1.63	0.84	11.96
52	Scholl Canyon Ballfield	3200 E Glenoaks Boulevard	31092600-00	52807	2.02	1.89	2.42	1.93	1.27	0.72	1.09	2.16	0.52	0.61	1.31	1.99	18.12
53	Glendale High School	1440 E Broadway	31691142-00	652085	2.43	2.50	2.29	4.10	3.17	1.60	3.69	1.00	1.00	0.68	2.79	2.43	27.67
54	Wilson Junior High School	1220 Monterey Road	31692740-00	652067	0.14	0.01			0.19	0.18	0.44	0.18	0.18	0.13	0.13	0.03	1.61
55	Glendale Adventist Medical Center	1520 E Chevy Chase Drive	31791090-00	77541	1.51	1.29	1.43	1.15	1.18	1.19	1.60	2.18	1.76	0.97	1.24	1.36	16.87
56	Glenoaks Elementary School	2015 E Glenoaks Boulevard	31791182-00	75639	0.23	0.33	0.45	0.93	0.38	0.09	0.46	0.03	0.03	0.06	0.29	0.15	3.43
57	Glendale Community College (2 - meters)	1500 N Verdugo Road	31891780-00	51835 53814	5.40	2.63		5.22	1.32	1.32	4.98	3.04	1.73	3.07	2.03	2.83	33.56
[redacted]	Oakmont Country Club	3100 Country Club Drive	31893000-00	52975	37.52	32.56	50.88	38.84	25.77	9.47	22.54	22.63	31.95	28.39	31.50	44.34	374.38
59	Central Library	222 E Harvard Street	32093752-00	51989 51996	0.74	0.60	0.70	0.65	0.91	0.08	0.23	0.25	0.18	0.16	0.30	0.33	5.12
60	Armory - State of California	230 E Colorado Street	32290830-00	54715	0.12	0.13	0.10	0.11	0.12	0.12	0.23	0.22	0.22	0.09	0.09	0.10	1.65
61	Scholl Canyon Golf Course	3800 E Glenoaks Boulevard	33093165-01	54713	18.69	23.04	19.07	20.82	13.11	9.74	16.09	15.78	5.42	6.90	13.78	21.24	183.68
62	Upper Scholl Recycled Water P.S.	3798 E Glenoaks Boulevard	33093180-01 50019056-00	53114 53117 43171911	0.55	0.38	0.07	0.11		0.10	0.16	0.20	0.11	0.20	0.11	0.87	2.86
63	LA County Sanitation District - Scholl Canyon Landfill	2847 E Glenoaks Boulevard	50008944-00	52808		13.38	12.39	21.37	7.62	7.62	12.04	15.27	6.32	3.07	8.77	15.65	123.30
64	City of Glendale - Public Works	3798 E Glenoaks Boulevard	50008945-00	80047							0.01						0.01
65	City of Glendale - Public Works	3798 E Glenoaks Boulevard	50009170-00	46349								0.74					0.74
66	City of Glendale - Public Works	1926 Fern Lane	50005623-00	74167		0.01	0.02	0.02	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.14
67	Colson & Colson G C Inc (Glendale Retirement)	1551 E Chevy Chase Drive	50008949-00	81966	0.11	0.11	0.12	0.11	0.36	0.11	0.21	0.25	0.22	0.10	0.15	0.15	2.03
68	Americana at Brand LLC	233 S Brand Boulevard	50009495-00	88293	0.17	2.25		1.49	0.59	0.59	1.65	0.59	0.53	0.92		0.87	9.86
69	City of Glendale - Neighborhood	870 Monterey Road	50010490-00	91283	0.06	0.04	0.06	0.03	0.02	0.01	0.02	0.02	0.02	0.02	0.03	0.05	0.38
70	[illegible]	[illegible] Monterey Road	[illegible]	[illegible]	0.12	0.00	0.09		0.07		0.02		0.00		0.00		0.30
	Carr Park	1415 E Colorado Street	0	0													0.00
	Less Make-up Water (Potable)	To Glendale and Fern Ln RW Tanks	VERDUGO SCHOOL PROJECT (B)			0.44					0.02						0.47
	Less Make-up Water (Potable)	To Glendale Recycled Tank	VERDUGO SCHOOL PROJECT (B)			0.17		16.61				2.99	2.22	2.90	0.25		25.14
		(B)	Acre Feet		95.24	90.82	117.81	105.13	76.25	37.71	79.67	74.15	62.83	48.06	72.32	99.34	959.32
		(A's) + (B)	Total Usage - Acre Feet		134.41	203.49	186.55	271.79	202.81	109.63	202.91	208.17	107.31	87.27	162.06	189.76	2,066.17

Attachment 4 – Point of Discharge Map



Attachment 5 – Pasadena Non-Potable Water Project Draft and Final Environmental Impact Report and Glendale 2016 Water Master Plan

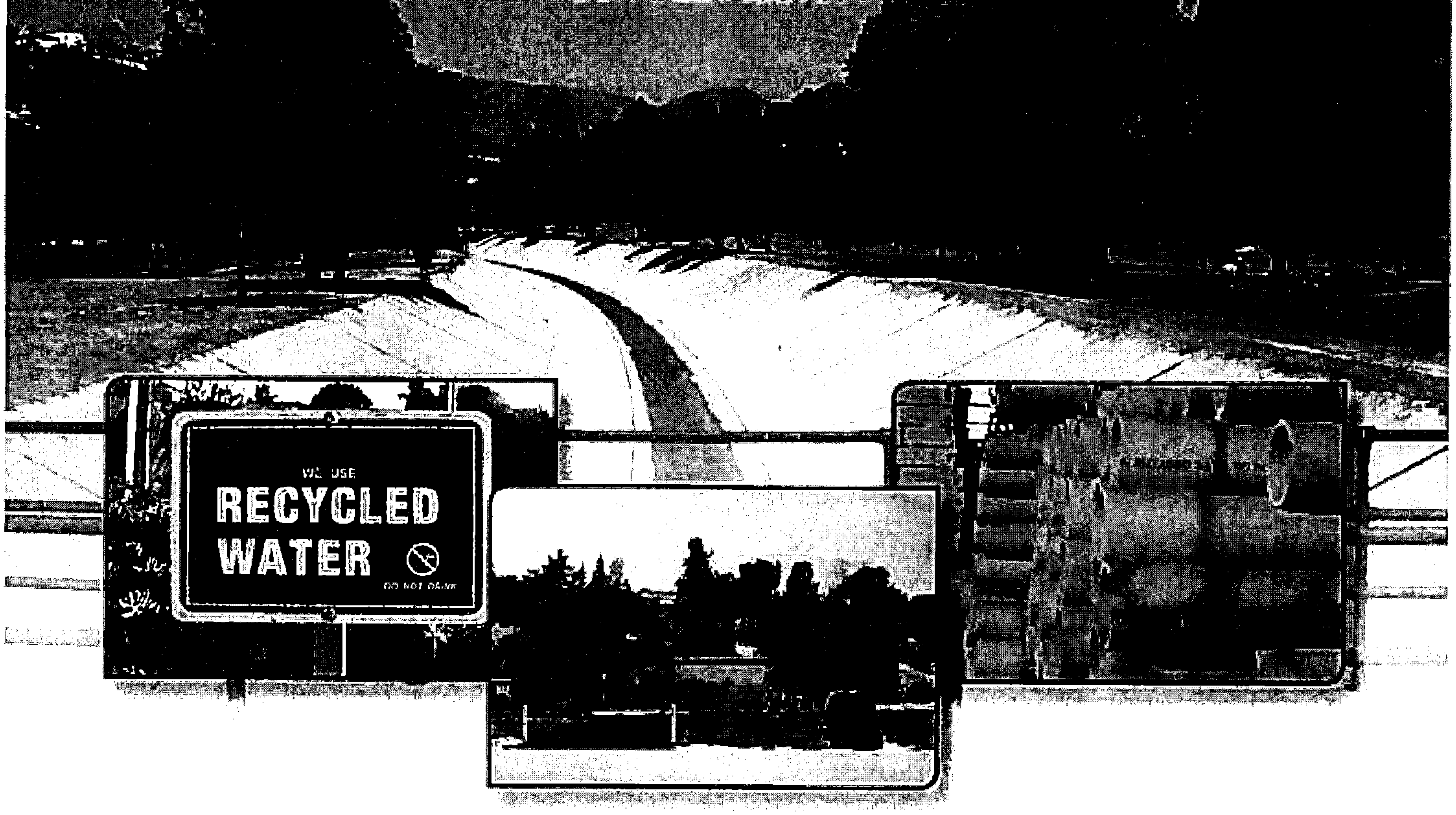
Provided on CD with this Petition for Change submission package

PASADENA NON-POTABLE WATER PROJECT

ENVIRONMENTAL IMPACT REPORT

FINAL

SCH #2014081091



Prepared By:

RMC water and environment

In Association with PCR

DECEMBER 2015

Attachment 6 – Photographs

Photographs of the Existing Point of Discharge (See Attachment 4 for map showing location)

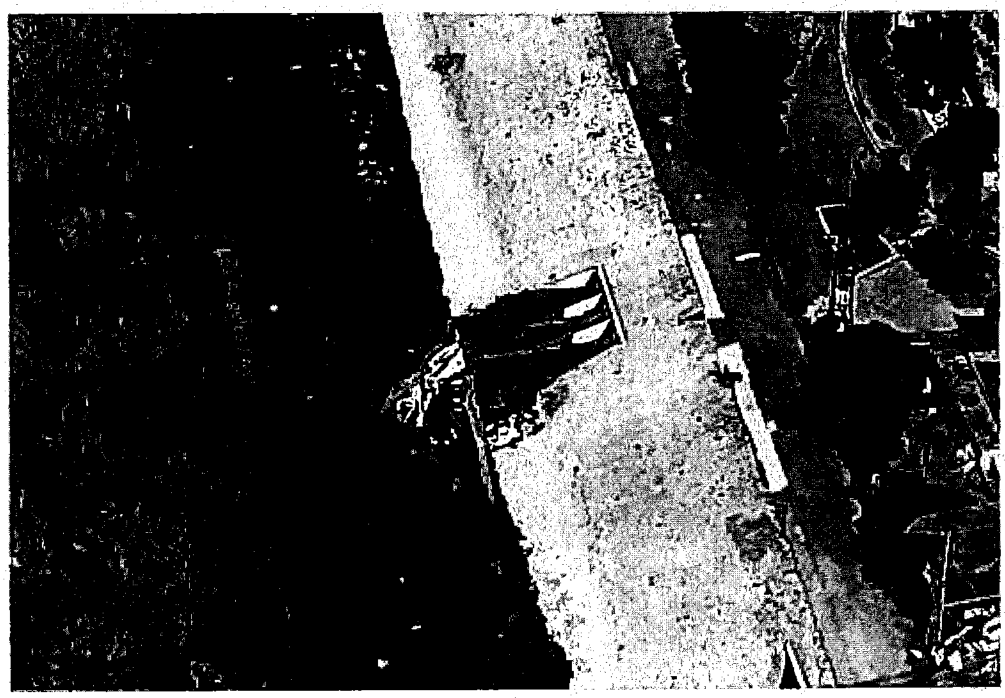


Figure 4: Los Angeles River at Discharge Point

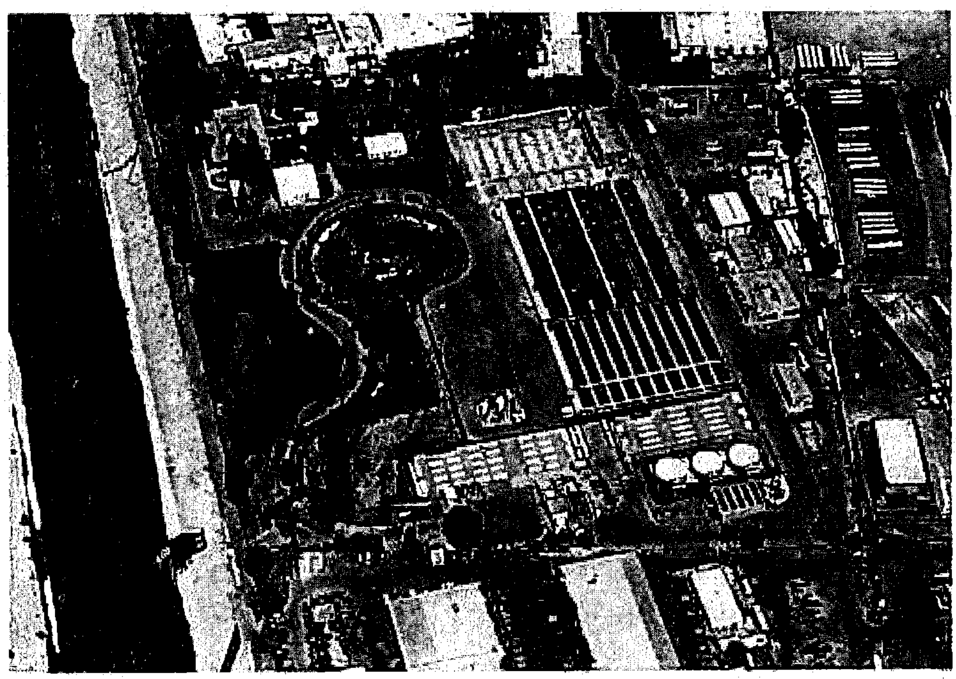


Figure 5: Ariel of LAGWARP and Discharge Point

Representative Photographs of Irrigated Land in Pasadena

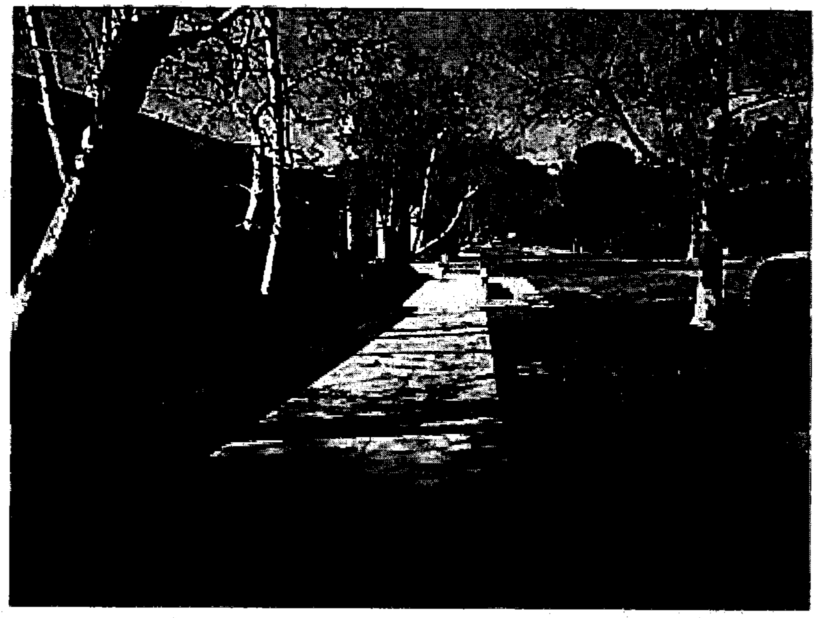


Figure 6: Representative Irrigated Land in Pasadena (Art Center)

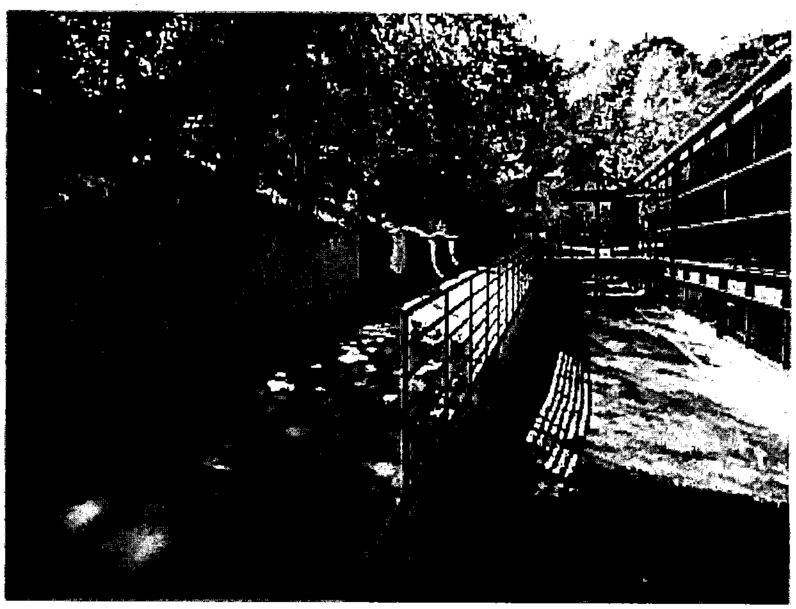


Figure 7: Representative Irrigated Land in Pasadena (Art Center)

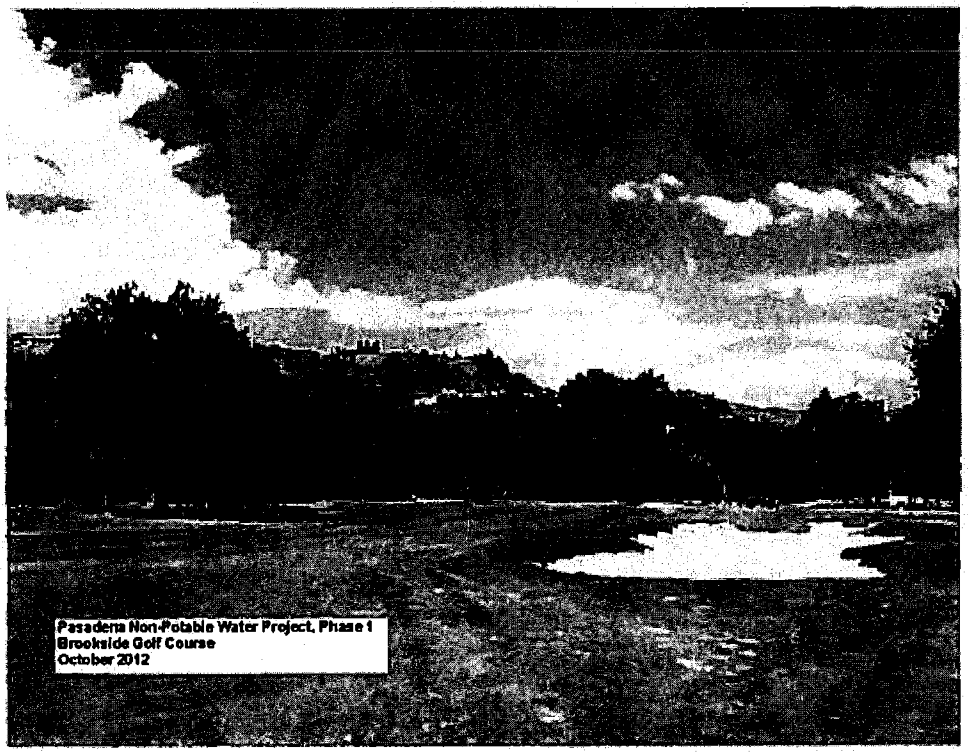


Figure 8: Representative Irrigated Land in Pasadena (Brookside Golf Course)

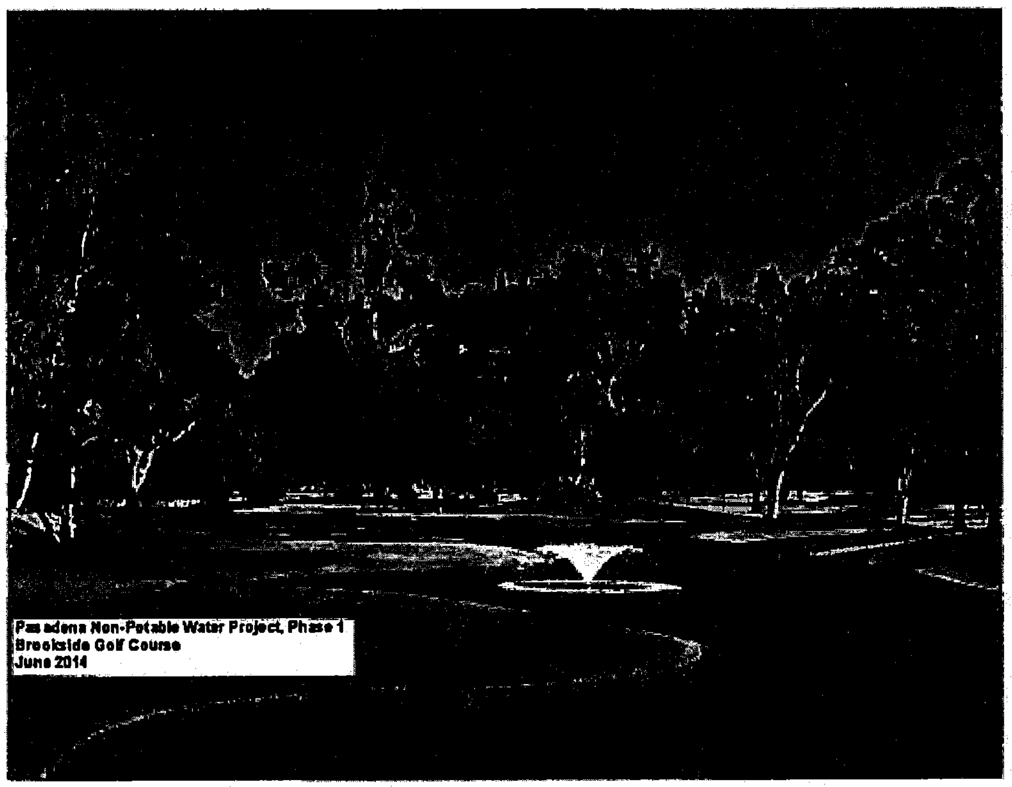


Figure 9: Representative Irrigated Land in Pasadena (Brookside Golf Course)

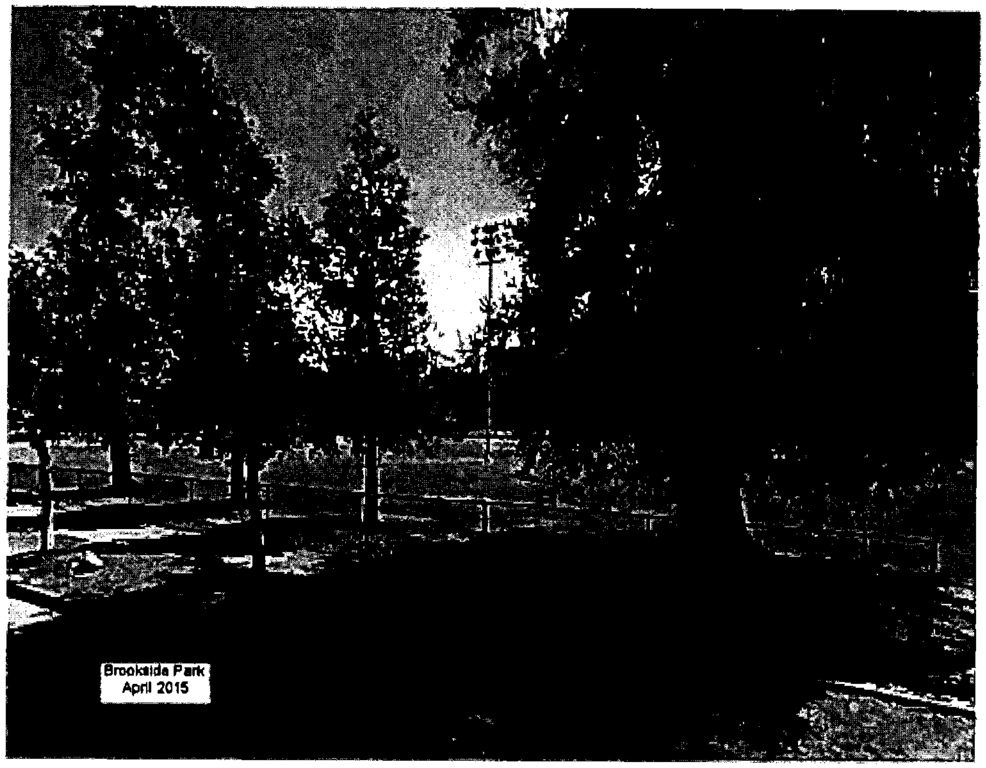


Figure 10: Representative Irrigated Land in Pasadena (Brookside Park)

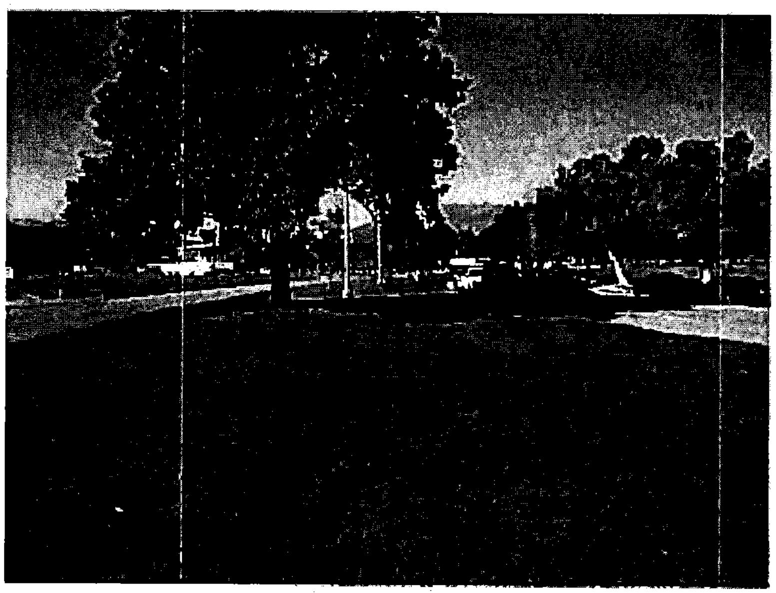


Figure 11: Representative Irrigated Land in Pasadena (Rosebowl)

Attachment 7 – Joint Powers Agreement

AMENDMENT NO. 1

JOINT POWERS AGREEMENT
BETWEEN THE CITY OF LOS ANGELES AND
THE CITY OF GLENDALE TO PROVIDE FOR
OPERATION AND MAINTENANCE OF THE
LOS ANGELES-GLENDALE WATER RECLAMATION PLANT

This Amendment No. 1 to the "Joint Powers Agreement Between the City Of Los Angeles And The City Of Glendale To Provide For Operation And Maintenance Of The Los Angeles-Glendale Water Reclamation Plant" ("1973 JPA") (Los Angeles Contract Number 42257) related to the operation, maintenance, upgrade and improvement of the Los Angeles-Glendale Water Reclamation Plant (the "Plant") dated 1973, is made and entered into this day of July 3, 2003 by and between the City of Glendale, a California Municipal Corporation ("Glendale") and the City of Los Angeles, a California Municipal Corporation ("Los Angeles"), collectively, the "Parties."

WHEREAS, on September 25, 1970, the Parties entered into the "Joint Powers Agreement Between The City of Los Angeles and The City Of Glendale To Provide For Engineering And Architectural Services For The Preparation Of Plans And Specifications For Stage I Of The Glendale-Los Angeles Water Reclamation Plant" ("1970 JPA"); and

WHEREAS, in said 1970 JPA, the Parties agreed: (a) that the Parties plan to share equally and jointly in the cost of physical plant and ownership of the inflow capacity and plan to share the operation and maintenance costs of the Plant on an equal basis; (b) that Glendale conveyed its fee interest of approximately 17 acres in said land to Los Angeles by grant deed for the sole purpose of constructing, operating and maintaining the Plant and in the event the land should ever cease to be used for a water reclamation plant, within 12 months of said date, Los Angeles shall convey an undivided one-half (1/2) interest in the land to Glendale; and (c) that Glendale and Los Angeles are joint and equal partners in the ownership of the reclaimed water produced by the Plant and each city has rights to one-half of the reclaimed water before its lawful discharge into the Los Angeles River and said rights are held to be separate and independent of the rights to wastewater treatment capacity and may be separately conveyed in title; and

WHEREAS, on February 28, 1973, the Parties entered into the 1973 JPA in order to set forth the Parties' respective duties and responsibilities regarding operation and maintenance of the Plant; and

WHEREAS, beginning in 1999, Los Angeles entered into agreements with other entities in the region for conveyance, treatment and disposal of wastewater services in a manner that proportionally shares in the operation, maintenance and capital costs for said services as calculated by measuring discharge in terms of flow and strength in an amalgamated system as described in said agreements (the "Amalgamation Agreement"); and

WHEREAS, Los Angeles proposes to enter into the Amalgamation Agreement with Glendale by which a portion of the Plant would be considered to be in said amalgamated system as set forth in the Amalgamation Agreement; and

WHEREAS, Glendale desires to enter into said Amalgamation Agreement under the terms and conditions set forth therein; and

WHEREAS, concurrent with Glendale entering into said Amalgamation Agreement, it will be necessary to amend the 1973 JPA in order to accommodate the terms and conditions of the Amalgamation Agreement and provide consistency therewith; and

WHEREAS, the Parties acknowledge and agree to make best efforts to negotiate and execute, within two years from the effective date of this Amendment No. 1, a replacement agreement or a second amendment to the 1973 JPA to further clarify the duties and responsibilities for operation and maintenance of the Plant; and

WHEREAS, this Amendment No. 1 shall not be deemed an abrogation of the 1970 JPA.

NOW, THEREFORE, the parties agree as follows:

(1) <u>The Parties hereby acknowledge and ratify the terms of the 1970 JPA except Paragraph 12 therein which is deemed by the Parties to be superseded by Section IX.A of the Amalgamation Agreement, as defined herein</u>.

(2) <u>The 1973 JPA is hereby amended as follows</u>:

a. <u>Paragraph I shall be amended to add the definitions of "Amalgamation Agreement," "Amalgamated System," "Amalgamated System Sewerage Facilities Charge," "Flow Year," "MGD-Miles" and "Strength" to read as follows:</u>

"<u>Amalgamation Agreement</u>" means that certain agreement between Los Angeles and Glendale for the conveyance, treatment and disposal of wastewater providing for the discharge of wastewater from Glendale to Los Angeles' wastewater treatment and collection system, including the discharge of sludge from Glendale's portion of the Plant and for Glendale's payment to Los Angeles for conveying, treating and disposing of Glendale's wastewater discharges.

"<u>Amalgamated System</u>" means that portion of the Los Angeles Wastewater Treatment and Collection System providing service to Glendale, as further defined in the Amalgamation Agreement. The Amalgamated System does not include the portion of the Plant the costs of which are paid by the City of Glendale.

"<u>Amalgamated System Sewerage Facilities Charge</u>" or "<u>ASSFC</u>" means the charge, as determined in Section II.C.3 of the Amalgamation Agreement, levied on new or expanding dischargers to recover the full cost of constructing Amalgamated System capacity to accommodate the anticipated increase in wastewater discharge.

"<u>Amalgamated System Sewerage System Charge</u>" or "<u>ASSSC</u>" means the charge levied on an entity to recover that entity's proportionate share of the net amalgamated system expenses as set forth in the Amalgamation Agreement.

"<u>Flow Year</u>" means the fourth quarter of one Fiscal Year and the first three quarters of the next Fiscal Year. The designation of the Flow Year (e.g. 1998-99) shall be the same as that of the Fiscal Year from which the three quarters are utilized.

"<u>MGD-Miles</u>" means the product of the quantity of flow of an area of Los Angeles, Glendale or other entity discharging wastewater to the Amalgamated System and the distance between the point of discharge of that area of Los Angeles, Glendale or other entity into the Amalgamated System and the point(s) of treatment as more fully described in the Amalgamation Agreement.

"Strength" means the parameters of biochemical oxygen demand and suspended solids as defined in the Amalgamation Agreement and as same may be amended.

b. Paragraph I, shall be amended to remove the definitions of "Connecting Sewer," "Excess Flow," "Hyperion Plant," and "Plant Influent."

c. Paragraph I, shall be amended to revise the definitions of "Operation and Maintenance Costs," "Overhead," "Product Water," and "Plant Waste" to read as follows:

"Operation and Maintenance Costs" with respect to the Plant means any funds expended each Fiscal Year in connection with operation, maintenance, upkeep, repair, improvement, alteration, renewal and replacement of said Plant less any revenue or income derived from the sale of by-products other than reclaimed water. The costs for or in connection with the aforesaid items shall include the cost of all tools, equipment, labor, supplies, materials, appliances, power, fuel, utilities, engineering and inspection, and all overhead connected therewith.

"Overhead" means those costs which are applicable to productive activities generally but not chargeable to specific projects or activities. Overhead which totals 37.85 percent for the Bureau of Sanitation of Los Angeles will be applied to the Direct Labor Costs of the Operation and Maintenance of the Plant and 83.17 percent for the Bureau of Engineering of Los Angeles will be applied to the Direct Labor Costs of engineering and administration. The above percentages are subject to review at intervals of not less than two years for the purpose of revising the rates to reflect any cost adjustments. The costs of administration, management and support activities as part of the Amalgamated System Expenses pursuant to Section II.B.2 of the Amalgamation Agreement are not included in this definition.

"Reclaimed Water" means that treated portion of sewage to be discharged from the Plant for distribution to Glendale and Los Angeles for their reuse or their disposal.

"Plant Waste" means solids captured in the primary sedimentation process, solids wasted from the activated sludge process, skimmings, and wash water, together with treated or untreated sewage and other wastes discharged from the Plant into the Amalgamated System for transportation, treatment and disposal.

d. Paragraph II, subsection C shall be amended to read as follows:

C. Capital Costs

Should Los Angeles determine that additional Capital Costs are required in order for the Plant to function properly, upon mutual agreement by both parties, Los Angeles shall be permitted to make such capital expenditures.

e. Paragraph IV, Subsection C shall be amended to read as follows:

C. Plant Capacity Operation

Los Angeles shall regulate the Plant to operate at all times at Plant capacity as defined herein. The Parties agree to renegotiate this subsection of the 1973 JPA due to potential regulatory and NPDES permit requirements affecting the operational capacity of the Plant. This renegotiation shall take place as part of the "best efforts" negotiation of a replacement JPA contemplated by the recitals of this amendment.

f. Paragraph IV, Subsections D and F shall be removed.

g. Paragraph IV, Subsection E shall be renumbered and amended to read as follows:

D. Right of Glendale to Discharge Plant Waste into the Amalgamated System

Glendale, as part owner of the Plant, shall be permitted to discharge its proportional share of the Plant Waste into the Amalgamated System.

h. Paragraph V, Subsections A and B shall be removed.

i. Paragraph V, Subsection C shall be renumbered and amended to read as follows:

A. Allocation of Costs for Flow Determination

The cost of measurement of combined flow at the Plant will be treated as Plant cost and shared in the same manner as other Plant costs.

j. Paragraph VI shall be amended to read as follows:

A. Operation and Maintenance Charge for the Plant. Glendale shall pay to Los Angeles annually its share of the operation and maintenance costs of the non-Amalgamated System portion of the Plant for each Fiscal Year, charged to Glendale pursuant to this agreement, Glendale's share shall be determined as follows:

Glendale's Share = $[(O\&M_Q) + \sum(O\&M_{Strength} \times D_{Strength}/TD_{Strength})]/2$,

where:

$O\&M_Q$ = The total operation and maintenance costs of the Plant for the Fiscal Year, which are allocated to flow using the same method as used to allocate Amalgamated System costs in Section III.A.1.a of the Amalgamation Agreement;

$O\&M_{Strength}$ = The total operation and maintenance costs of the Plant for the Fiscal Year, which are allocated to each Strength parameter using the same method as used to allocate Amalgamated System costs in Section III.A.1.a of the Amalgamation Agreement;

$D_{Strength}$ = The quantity that Glendale contributes, for each Strength parameter, to the Strength loading of the non-Amalgamated System portion of the Plant during the Fiscal Year;

$TD_{Strength}$ = The total Strength loading, for each Strength parameter, of the non-Amalgamated System portion of the Plant during the Fiscal Year.

B. Payment

1. On or before the first day of February of each Fiscal Year, Los Angeles shall submit to Glendale a preliminary invoice for estimated charges for Operation and Maintenance of the Plant and charge for Contract Administration, as such are applicable for that Fiscal Year. The amounts of such estimated charges for each Fiscal Year, after expiration of the first full Fiscal Year that this agreement is in effect, shall be identical to the total amounts billed on the final invoice for sewage treatment and disposal and for sewage transportation for the preceding Fiscal Year. On or before the first day of March, immediately following the aforesaid preliminary billing, the estimated charges shall be paid by Glendale to Los Angeles.

2. On or before the first day of February after the close of a Fiscal Year, Los Angeles shall submit a final invoice to Glendale for the final charges for operation and Maintenance of the Plant and charge for Contract Administration, as such were applicable for that Fiscal Year. The final invoice shall account for the advance payment made under the preliminary invoice for that Fiscal Year. Within 30 days after the date of the final invoice, the payment or refund set forth in said invoice shall be made.

k. Paragraph VII, Subsection A shall be amended to read as follows:

A. Glendale will comply and will require all persons, public agencies, firms, or corporations within its territorial boundaries or using any Glendale sewers tributary to the Amalgamated System and the Plant, to comply with all standards adopted by Los Angeles relative to the quality of sewage permitted to be discharged into the Amalgamated System, and will adopt and enforce such regulations as may be necessary.

(3) All other provisions, requirements, terms and conditions of 1973 JPA shall remain in full force and effect.

IN WITNESS WHEREOF, Glendale and Los Angeles have caused this Amendment No. 1 to the 1973 JPA related to the operation, maintenance, upgrade and improvement of the Los Angeles-Glendale Water Reclamation Plant ("Reclamation Plant") to be executed by their duly authorized representatives on this 3 day of July, 2003.

ATTEST: 7-3-03

By: ______________________
J. Michael Carey
Los Angeles City Clerk

CITY OF LOS ANGELES

By: ______________________
James K. Hahn, Mayor
JUN 30 2003
Date: ______________________

Approved as to Form:

Rockard J. Delgadillo
Los Angeles City Attorney

By: ______________________
Christopher M. Westhoff
Assistant City Attorney

CITY OF GLENDALE

By: ______________________
James E. Starbird
City Manager
Date: 7/7/03

Approved as to Form:
Scott H. Howard
City Attorney

By: ______________________
Christina R.Sansone
Sr. Assistant City Attorney

J:\FILES\DOCFILES\VARIOUS\WASTEWATR\LAGWRP-amend 73 & 70-03.doc

Appendix H
Native American Tribal Consultation

glendale california

City of Glendale
Glendale Water & Power
Administration

141 N. Glendale Ave., Level 4
Glendale, CA 91206-4975
Tel 818.548.2107 Fax 818.552.2852
www.glendaleca.gov

February 12, 2018

Fernandeño Tataviam Band of Mission Indians
Caitlin B. Gulley
Tribal Historic and Cultural Preservation Officer
1019 2nd Street
San Fernando, CA 91340

Soboba Band of Luiseño Indians
Joseph Ontiveros, Cultural Resource Director
P.O. Box 487
San Jacinto, CA 92581

RE: Glendale Wastewater Change Petition WW0097 IS/MND

Dear Tribal Representative:

In conformance with the tribal consultation requirements of Assembly Bill (AB) 52, this letter is to inform you that Glendale Water and Power (GWP) is reviewing the proposed project described below. Per AB 52, the tribe has the right to consult on a proposed public or private project prior to the release of a negative declaration, mitigated negative declaration or environmental impact report. The project description is as follows:

As a result of increased demand for recycled water, GWP proposes to gradually decrease the volume of treated wastewater discharged from the Los Angeles-Glendale Water Reclamation Plant (LAGWRP) to the adjacent Los Angeles River (River) channel in order to increase the delivery of recycled water to various users within the GWP and Pasadena Water and Power (PWP) service areas and adjacent jurisdictions. Specifically, GWP is proposing to gradually increase its use of recycled water from approximately 2,000 acre-feet (AF) per year to approximately 5,500 AF by 2028. Over approximately the next ten years, this proposed change would gradually reduce the volume of LAGWRP's discharges into the River from 10,500 AF to 7,500 AF per year. This additional recycled water will be put to use within the GWP and PWP services areas (see **Figure 1**, *Regional Vicinity Map*, **Figure 2**, *Aerial Photograph*, **Figure 3**, *Place of Use – GWP Service Area*, and **Figure 4**, *Place of Use – PWP Service Area*, below).

Aside from the proposed reductions in treated wastewater discharges to the River and increased use of recycled water within the GWP and PWP service areas, the GWP also proposes limited construction activities associated with the installation of three (3) new 8-inch recycled water distribution pipelines and three (3) associated below-grade pump stations, which would be limited to existing street rights-of-way and other disturbed areas within the City of Glendale. Refer to Figure 2 for the location of the pipeline alignments and pump stations associated with proposed construction activities.

You have 30 calendar days from receipt of this letter to notify us in writing that you want to consult on this project. Please provide the lead contact person's contact information. Please mail your request to:

Michael De Ghetto, P.E.
Chief Assistant General Manager – Water
Glendale Water & Power
141 N. Glendale Avenue, 4th Floor
Glendale, CA 91206

(818) 551-3023
MDeGhetto@glendaleca.gov

Sincerely,

Michael De Ghetto
Chief Assistant General Manager – Water

Attachments: Figure 1, Regional Vicinity Map
Figure 2, Aerial Photograph
Figure 3, Place of Use – GWP Service Area
Figure 4, Place of Use – PWP Service Area