APPENDICES

Appendix A INITIAL STUDY AND NOTICE OF PREPARATION

Grayson Repowering Project
Glendale Water and Power

Lead Agency:
City of Glendale
633 East Broadway, Room 103
Glendale, California 91206

Proponent:
City of Glendale
Department of Water and Power
141 N. Glendale Avenue
Glendale, California 91206

Consultant:
Stantec Consulting Services Inc.
290 Conejo Ridge Avenue
Thousand Oaks, California 91361

December 15, 2016

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Abbreviations

AB = Assembly Bill

ACT = Alquist-Priolo Earthquake Fault Zoning Act

AICUZ = Air Installation Compatible Use Zone

ASTM = American Society for Testing and Materials

AST = Aboveground Storage Tank

BMP = Best Management Practices

CAISO = California Independent System Operator

CARB = California Air Resources Board

CEC = California Energy Commission

CNDDB = California Natural Diversity Database

CNEL = Community Noise Equivalent Level

CRHR = California Register of Historic Resources

dBA = A-weighted decibels

DC = Direct Current

EIR = Environmental Impact Report

ESA = Environmental Site Assessment

ESL = Environmental Screening Level

FEMA = Federal Emergency Management Agency

FIRM = Flood Insurance Rate Map

FMMP = Farmland Mapping and Monitoring Program

GFD = City of Glendale Fire Department

GHG = Greenhouse Gas

GRHR = Glendale Register of Historic Resources

HERO = Human and Ecological Risk Office

IRP = Integrated Resource Plan

IS = Initial Study

kV = Kilovolt

LAGWRP = Los Angeles-Glendale Water Reclamation Plant

MCL = Maximum Concentration Levels

MDL = Method Detection Limit

MGD = Millions of Gallons Per Day

MG/KG = Milligrams per Kilograms

MRZ = Mineral Resource Zone

MW = Megawatts

NPDES = National Pollutant Discharge Elimination System

NRCS = Natural Resource Conservation Service

OEHHA = Office of Environmental Health Hazard Assessment

PCC = Portland Cement Concrete

PIE = Power Island Equipment

PI = Plasticity Index

REC = Recognized Environmental Conditions

RPS = Renewables Portfolio Standard

RSL = Regional Screening Level

SCAQMD = South Coast Air Quality Management District

SCAQMP = South Coast Air Quality Management Plan

SDC = Seismic Design Category

SEA = Significant Ecological Area

SFRWQCB = San Francisco Regional Water Quality Control Board

SMARA = Surface Mining and Reclamation Act

SMP = Soil Management Plan

SWPPP = Storm Water Pollution Prevention Plan

TAC = Toxic Air Contaminants

City = City of Glendale and Glendale Water and Power

TPH = Total Petroleum Hydrocarbons

USDA = United States Department of Agriculture

USEPA = United States Environmental Protection Agency

UST = Underground Storage Tank

UM = Micrometers

VOCs = Volatile Organic Compounds

WQMP = Water Quality Management Plan

1.0 INTRODUCTION

1.1 OVERVIEW AND LOCATION

The City of Glendale, Department of Water and Power (City) is proposing to repower the Grayson Power Plant (Project), located in an industrial area of the City of Glendale at 800 Air Way, Glendale, California 91201, just northeast of the Interstate 5 and Highway 134 interchange (Figures 1 and 2). A majority of the facilities located at the Grayson Power Plant, with the exception of Unit 9 (a simple cycle peaking plant built in 2003), were completed between 1941 and 1977, and are proposed to be replaced with more reliable, efficient, flexible, and cleaner units and related facilities and infrastructure. The City is proposing to replace all the existing generation facilities, units, and their related infrastructure, with the exception of Unit 9, by removing existing aboveground and belowground equipment, and facilities and building new generation facilities. This includes demolishing the Grayson Power Plant Boiler Building, replacing Cooling Towers 1 through 5, and replacing the generation units, designated as Unit 8A and 8B/C (Figure 3). The existing generation facilities (with the exception of Unit 9) would be replaced with a combination of combined cycle and simple cycle gas turbine generation units (Figure 4).

The Project would be located entirely within the existing Grayson Power Plant, an operating power plant. The site is bounded to the south by the Verdugo Wash and Highway 134, to the west by the Los Angeles River and Interstate 5, to the north by commercial properties, and to the east by commercial and residential properties. The approximate coordinates of the Project are 34° 09' 19" N and 118° 16' 42" W.

1.2 PURPOSE AND NEED

The proposed repowering of the Grayson Power Plant is necessary to meet current and future City energy needs and California Renewables Portfolio Standard (RPS) requirements. Pursuant with Senate Bill 350 that was signed into legislation in October 2015, the RPS requires retail sellers and publicly owned utilities including GWP to procure 50 percent of their electricity from eligible renewable energy resources by 2030. The City serves its power system load through a combination of renewable energy sources (both local and imports), non-renewable imports, and local generation. The City system's single largest contingency is nominally 100 megawatts (MW) based on imported power through the maximum City allocation on the 500 kilovolt (kV) Pacific Direct Current (DC) Intertie (Path 65).

In order to meet retail power load obligations, Glendale Water and Power (GWP) relies on a combination of both local and remote generation, as well as long-term power purchase agreements and spot market purchases from a variety of suppliers throughout the Western Electricity Coordination Council (WECC) territory, including the California Independent System Operator (CAISO). Natural gas for generation is supplied by several sources, which include gas reserves in Wyoming, a pre-paid gas commodity contract, and the daily gas market. Landfill

gas for generation at Grayson is supplied via dedicated pipeline from the Scholl Canyon Landfill in the City of Glendale. GWP also uses transmission and generation rights to take advantage of arbitrage opportunities and to transact with counterparties in the wholesale market. As a result of recent state mandates, GWP is becoming more involved in short and long-term markets for renewable energy and carbon allowances. GWP operates within the Balancing Area of the Los Angeles Department of Water and Power.

In June 2015, GWP completed its Integrated Resource Plan (IRP) that identified 260 megawatts (MW) of local generation at the existing Grayson Power Plant site as the best option to meet regulatory requirements for reliability. GWP has proposed to repower the existing Grayson Power Plant on the existing plant Site. The Project would replace 238[1] MW of the existing capacity from the boiler units (Unit Nos. 3, 4, 5) and combined cycle units (Unit Nos. 1, 2, 8A and 8B/C) with more efficient generation. Unit No. 9 commissioned in 2003, would remain. The Project would comprise two 50 MW simple cycle units and two 75 MW one-on-one combined cycle units. Unit size is limited so that minimum generation levels would closely match the City's internal generation needs under low system load conditions. The simple and combined cycle unit sizes are also strongly influenced by the City's intent to self-supply spinning and non-spinning reserve and to integrate future renewable resources to meet state regulatory requirements for increasing procurement of renewable energy resources.

1.3 PROJECT TITLE

Glendale Water and Power
Grayson Repowering Project

1.4 LEAD AGENCY

City of Glendale
633 East Broadway, Room 103
Glendale, California 91206

[1] Source: California Energy Commission, California operational Power Plants listing, dated July 8, 2014

- Unit 1 – 20 MW steam turbine-generator, built in 1941
- Unit 2 – 20 MW steam turbine-generator, built in 1947
- Unit 3 – 20 MW steam boiler turbine-generator, built in 1953
- Unit 4 – 44 MW steam boiler turbine-generator, built in 1959
- Unit 5 – 44 MW steam boiler turbine-generator built in 1964
- Unit 8A– 30 MW 2x1 FT4 combined cycle plant built in 1977
- Unit 8A and 8B/C – 60 MW 2x1 FT4 combined cycle plant built in 1977

The California Energy Commission (CEC) is the State of California's primary energy policy and planning agency. In California, the construction and operation of any thermal power plant with a generating capacity of 50 MW or greater (or a 50 MW or greater increase at an existing plant) require that a license first be issued by the CEC. The Project would replace 238 MW of existing generation capacity, with a net gain of 22 MW to meet the 260 MW regulatory requirement for reliability. The Project does not require a license issue by the CEC, therefore, the City of Glendale is the Lead Agency under the California Environmental Quality Act (CEQA). The Project would be subject to conformance with applicable Laws, Ordinances, Regulations, and Standards (LORS), which will be further discussed and evaluated in the EIR.

1.5 PROPONENT

City of Glendale
Glendale Water and Power

1.6 INTENDED USES OF THE INITIAL STUDY

This Initial Study (IS) is an informational document intended to inform the Lead Agency, other responsible or interested agencies and the general public of potential environmental effects of the Project. The environmental review process has been established to enable public agencies to evaluate potential environmental consequences and to examine and implement methods of eliminating or reducing any potentially significant adverse impacts.

December 15, 2016

Figure 1 Regional Location Map

Figure 2 Project Location

Stantec

Figure 3 Project Demolition

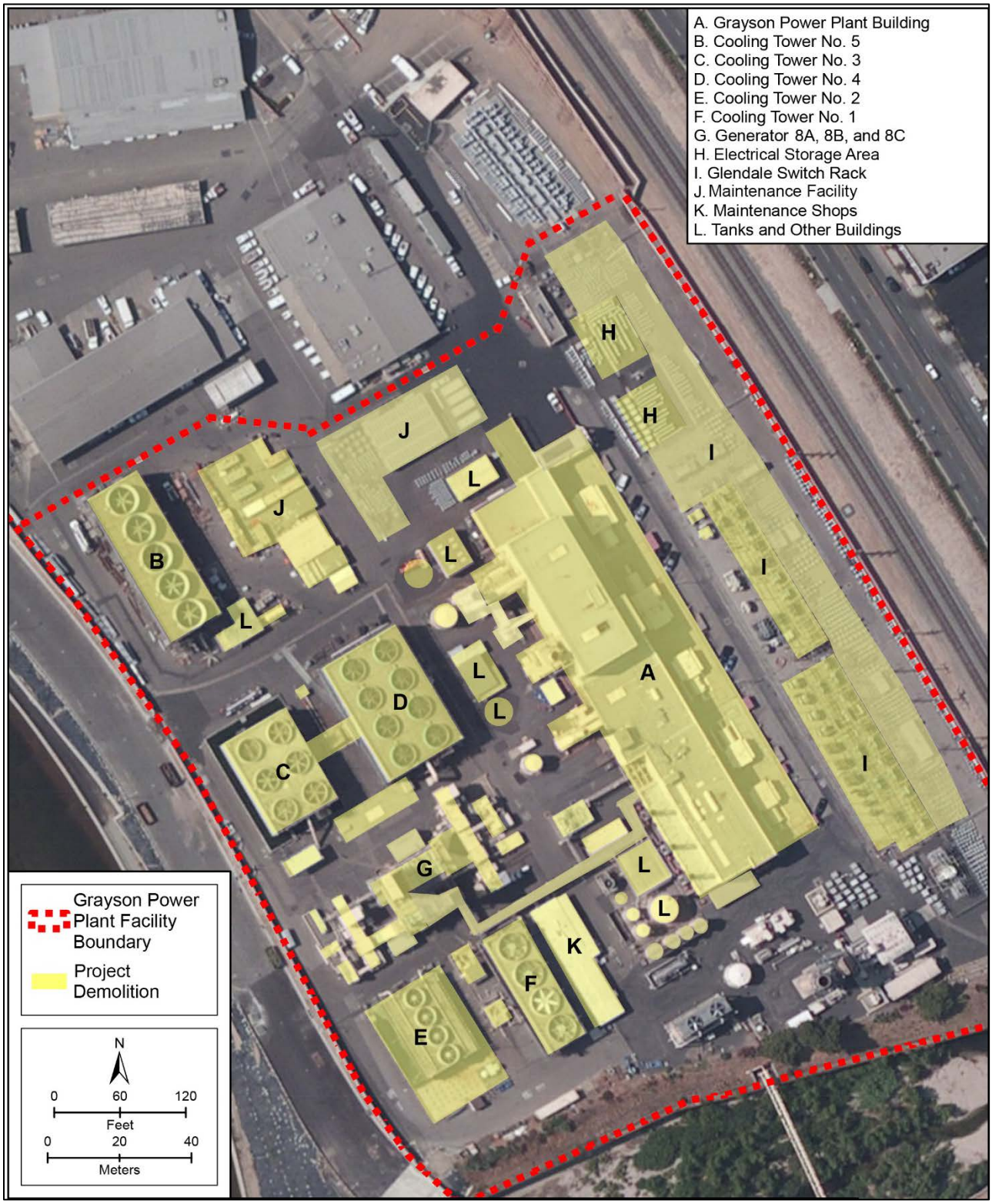
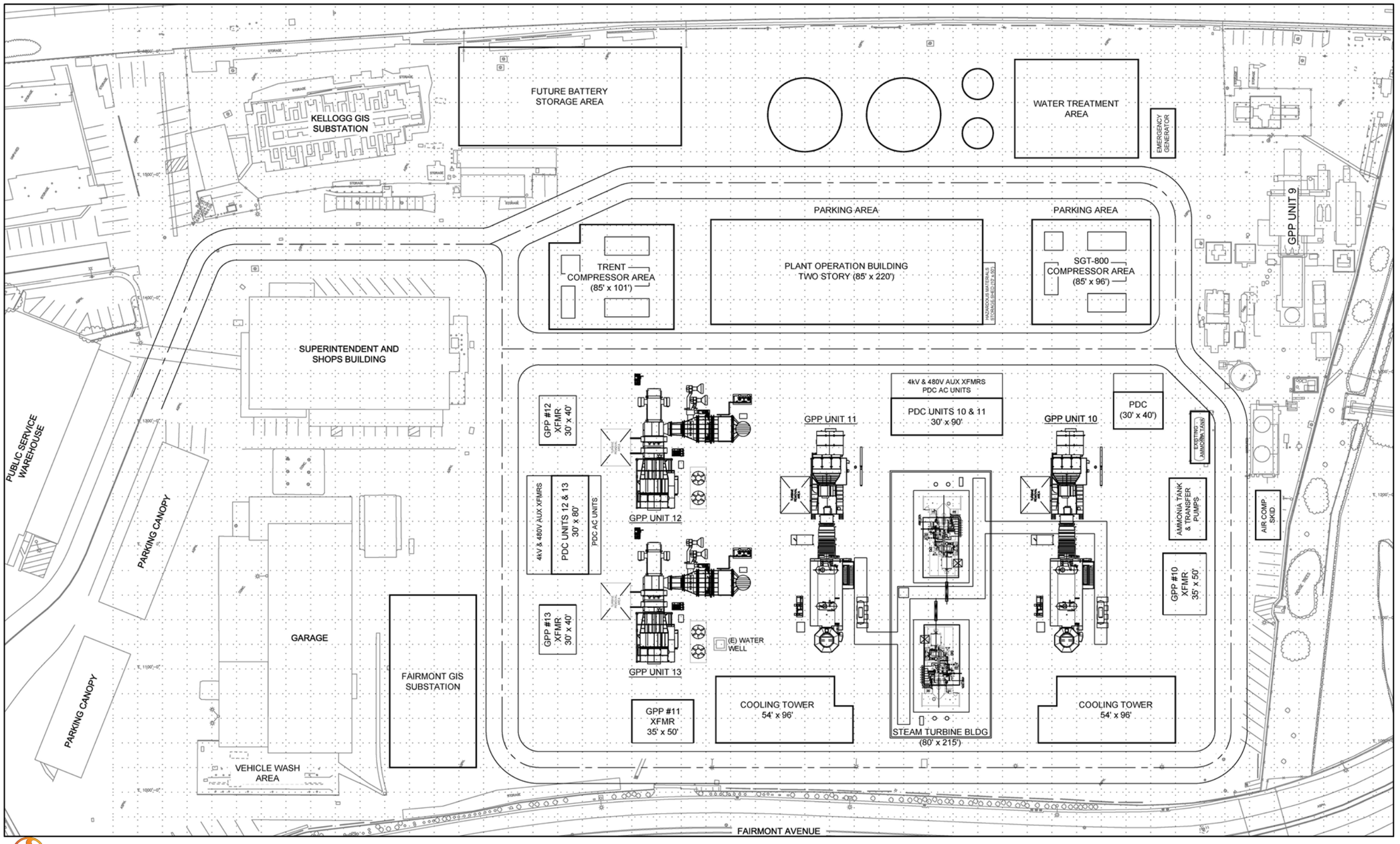


Figure 4 Project Conceptual Site Plan



2.0 ENVIRONMENTAL SETTING AND IMPACTS

2.1 AESTHETICS

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

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

No Impact

Impact Discussion

Scenic vistas are generally described in two ways: panoramic views (visual access to a large geographic area for which the field of view can be wide and extend into the distance), and focal views (visual access to a particular object, scene, or feature of interest). The Project site is in an industrial zoned area of the City of Glendale at 800 Air Way, Glendale, CA 91201, just northeast of the Interstate 5 and Highway 134 interchange. The site has a flat topography and is bounded to the south by the Verdugo Wash and Highway 134, to the west by the Los Angeles River and Interstate 5, to the north by commercial property and to the east by commercial property and then residential property. No scenic vistas, as identified in the City's Open Space and Conservation Element (January 1993), exist within or in proximity to the Project site. Therefore, there would be no impact on a scenic vista. This issue will not be further analyzed in the EIR, consistent with CEQA Guidelines Section 15063 (c)(3).

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

No Impact

Impact Discussion

The Project site is currently developed as the Grayson Power Plant and there are no unique geological features on the Project site. In addition, according to the City of Glendale General Plan established by Caltrans "California Scenic Highway Mapping System," there are no state scenic highways located adjacent to, or within view of, the Project site. Therefore, no impacts to scenic resources within a state scenic highway would occur. This issue will not be further analyzed in the EIR.

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

Potentially Significant Impact

Impact Discussion

A potentially significant impact would occur if the Project were to introduce visual elements that would be incompatible with the character of the area surrounding the Project site. The Project site is currently developed and used as the Grayson Power Plant. The Plant would be reconfigured and could include taller structures than those currently existing. Therefore, the Project may have a potentially significant impact on the existing visual character of the site and surrounding area and this issue will be further analyzed in the EIR.

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

Potentially Significant Impact

Impact Discussion

Light

The Project site is located in a well-lit urban portion of the City of Glendale, which has higher levels of ambient nighttime lighting including street lights, freeway lighting, architectural and security lighting, and indoor building illumination. The existing Grayson Power Plant which already has night lighting for security and operational needs. The building entrances, parking areas, and common areas provide adequate night visibility for security. The Project would utilize outdoor lighting designed and installed with shielding to reduce light-sourced impacts to surrounding areas in compliance with the City's lighting ordinance. However, new sources of substantial light or glare could potentially adversely affect day or nighttime views in the area. Therefore, the Project may have a potentially significant impact and this issue will be further analyzed in the EIR.

Glare

The Project would be constructed of materials that minimize glare and reflect heat including light and cool-colored exterior wall materials balanced with low reflective glass materials. However, the Project could introduce new sources of glare that are incompatible with the surrounding areas. The Project may result in new source of substantial glare which would adversely affect day or nighttime views in the area. Therefore, they Project may have a potentially significant impact and this issue will be further analyzed in the EIR.

2.2 AGRICULTURE AND FORESTRY RESOURCES

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
AGRICULTURE AND FORESTRY RESOURCES: Would the Project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526, or timberland zoned Timberland Protection (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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?	☐	☐	☐	☒

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

Impact Discussion

The California Department of Conservation, Farmland Mapping, and Monitoring Program (FMMP), compiles Important Farmland maps pursuant to the provisions of Section 65570 of the California Government Code. These maps utilize data from the United States Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS) soil survey, and current land use information using eight (8) mapping categories and represent an inventory of agricultural resources within Los Angeles County. The maps depict currently urbanized lands and a

qualitative sequence of agricultural designations. Maps and statistics are produced using a process that integrates aerial photo interpretation, field mapping, a computerized mapping system, and public review. Mapping of farmland categories is conducted every two years.

Based on these resources, there is no existing prime farmland, unique farmland, or farmland of statewide importance within or adjacent to the Project site and no agricultural activities take place on the Project site. No agricultural use zone currently exists within the City of Glendale, nor are any agricultural zones proposed. Therefore, no impacts would occur. This issue will not be further analyzed in the EIR.

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

No Impact

Williamson Act contracts restrict land development of contract lands. The contracts typically limit land use in contract lands to agriculture, recreation, and open space, unless otherwise stated in the contract. The proposed property is not in the Williamson Act Conservation Contract database. Because the Project site is not part of a Williamson Act contract, no impacts associated with this issue would occur with development of the Project. This issue will not be further analyzed in the EIR.

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

No Impact

There is no existing zoning of forest land or timberland in the City of Glendale. Therefore, no impacts to these resources are expected to occur as a result of this Project. This issue will not be further analyzed in the EIR.

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

No Impact

Impact Discussion

There is no forestland within the City of Glendale. No forestland would be converted to non-forest use under the Project. Therefore, no impacts are expected to occur as a result of this Project. This issue will not be further analyzed in the EIR.

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

Impact Discussion

There is no farmland in the vicinity of or on the Project site. The Project would not result in conversion of farmland to non-agricultural uses. No impacts are expected to occur as a result of this Project. This issue will not be further analyzed in the EIR.

2.3 AIR QUALITY

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

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

Potentially Significant Impact

Impact Discussion

The Project would result in air pollutant emissions generated during demolition and construction activities as well as during Project operations that, if not mitigated, may have the potential to conflict with or obstruct implementation of the South Coast Air Quality Management District (SCAQMD) air quality plan. Therefore, the Project may have a potentially significant impact. The construction and operational air emissions associated with the Project will be further analyzed in the EIR.

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

Potentially Significant Impact

Impact Discussion

The Project would result in air pollutant emissions generated during demolition and construction activities, as well, as during Project operations that, if not mitigated, may violate an air quality standard, or significantly contribute to an existing or projected air quality violation. Due to the size of the Project and the potential for the generation of pollutants from construction and operation, the Project may have a potentially significant impact. This issue will be further analyzed in the EIR.

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)?*

Potentially Significant Impact

Impact Discussion

The Project has the potential to generate emissions that exceed significance thresholds established by SCAQMD, specifically when considered cumulatively with other current and proposed projects in the vicinity. As a result, the Project could contribute to a cumulatively considerable net increase in one or more criteria pollutants for which the region is in non-attainment under federal or state standards. Therefore, the Project may have a potentially significant impact and this issue will be further evaluated in the EIR.

d) *Expose sensitive receptors to substantial pollutant concentrations?*

Potentially Significant Impact

Impact Discussion

Sensitive receptors are defined as populations that are more susceptible to the effects of pollution than the population at large. The SCAQMD identifies the following as sensitive receptors: residences, schools, daycare centers, playgrounds, medical facilities, retirement homes, prisons, and dormitories or similar live-in housing. The Project is in an industrial zone, but may expose nearby residential sensitive receptors to substantial pollutant concentrations during construction and operation. Therefore, the Project may have a potentially significant impact and this issue will be further evaluated in the EIR.

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

Potentially Significant Impact

Impact Discussion

Construction may include excavation of hydrocarbon impacted soils, application of asphalt during paving and application of architectural coatings that have the potential to result in odors. Operation would involve exhaust from generating equipment and the use of various chemicals including ammonia that could result in odors. Therefore, the Project may have a potentially significant impact and this issue will be further evaluated in the EIR.

2.4 BIOLOGICAL RESOURCES

Issues	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporation	Less than Significant Impact	No Impact
BIOLOGICAL RESOURCES: Would the Project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

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

No Impact

Impact Discussion

The Project site is located in an urban area on developed land for the existing Grayson Power Plant and does not contain vegetation. A California Natural Diversity Database (CNDDB) review identified several occurrence records of sensitive plant and wildlife species within ten miles of the Project. However, no sensitive plant or wildlife species were observed, nor was suitable habitat located during an October 23, 2015 field survey of the site and a 300 foot surrounding buffer area. The Project would therefore have no direct impact to sensitive plant and wildlife species. Coyote brush scrub (*Baccharis pilularis* Shrubland Alliance) and willow thickets (*Salix sp.* Shrubland Alliance) vegetation communities were identified in the buffer area, but would not be directly impacted by Project implementation. Therefore, no impacts to sensitive habitats or species would occur from project implementation. This issue will not be further analyzed in the EIR.

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

No Impact

Impact Discussion

The Project site does not contain any riparian habitat or other sensitive natural communities identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service. The Project proposes to use recycled water from the Los Angeles-Glendale Water Reclamation Plant (LAGWRP) rather than potable water for generation system cooling. There is riparian habitat downstream of the LAGWRP that could be affected if there was a substantial diversion of effluent supporting this habitat as a result of the Project. The Cities of Los Angeles and Glendale jointly own the LAGWRP, for which the City of Glendale is a 50% owner of the facility. The wastewater treatment plant is rated for 20 million gallons per day (mgd) or 20,000 acre-feet per year. The plant produces between 16 and 18 mgd, which equates to an approximate volume of 16,000 to 18,000 acre-feet of recycled water per year. The City of Glendale's allocation is between 8,000 and 9,000 acre-feet per year. Over the last three years, the City of Glendale has been using between 1,500 and 2,000 acre-feet per year of its allocation. The treated water not reused is discharged to the Los Angeles River.

Grayson has had a 600 acre-feet per year allocation of recycled water since 1978. Recycled water use at Grayson in 2015, was approximately 370 acre-feet per year. The Project would

eliminate the use of potable water in the generation process by increasing use of recycled water. The Project's wet cooling system would consume approximately 600 acre-feet per year through evaporative loss. An additional approximately 270 acre-feet used for cooling system optimization would be maintained in a closed loop system between Grayson and LAGWRP. The potential increase of 230 acre-feet per year of recycled water from the Project is within Grayson's allocation. In addition, the volume of recycled water being used by the City has declined in recent years as golf courses and other large water users have reduced their demand for water. As a result, the Project's use of recycled water is not anticipated to result in a substantial change in the volume of discharges to the Los Angeles River, particularly when considering that the LAGWRP is one of many water discharge sources to the Los Angeles River. Therefore, the Project would not impact a riparian habitat or other sensitive natural communities. This issue will not be further analyzed in the EIR.

c) *Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

No Impact

Impact Discussion

The Project Site does not contain wetlands and would not have impacts related to federally protected wetlands as defined by Section 404 of the Clean Water Act. The Project is adjacent to the Los Angeles River and would have no substantial change to hydrological conditions to receiving waters (see response to 2.4 b) above). Therefore, the Project would have no impact on wetlands. This issue will not be further analyzed in the EIR.

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?*

No Impact

Impact Discussion

The Project site does not contain rivers, creeks, or waterways. The Project is located entirely within the existing Grayson Power Plant Site and surrounded by urban uses and wildlife species are unlikely to use the Project site as a migratory corridor due to the urban and industrial nature of the surrounding areas. The Los Angeles River and Verdugo Wash located adjacent to the Project site provide potential habitat for fish and wildlife as well as a movement corridor. However, as noted in the Reader's Guide for the Los Angeles River Ecosystem Restoration Project, the development that occurs along the waterways and concrete channelization that lines on portions of the Los Angeles River limit the habitat quality and connectivity service of the system (City of Los Angeles, 2016). The Project would not involve any work activities in the Los

Angeles River or Verdugo Wash nor would the Project's use of recycled water result in a substantial reduction in the volume of discharges to the Los Angeles River. As a result, the Project would have no impact on the movement of any resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors. Therefore, this issue will not be further analyzed in the EIR.

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

No Impact

Impact Discussion

The Project would occur on developed land with poor quality habitat to support biological resources. The Project would not result in removal of vegetation or trees nor would it involve an activity that has the potential to substantially reduce the volume of discharges to the Los Angeles River from the LAGWRP that could adversely affect biological resources in the Los Angeles River. The Project would have no impact. This issue will not be further analyzed in the EIR.

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

Impact Discussion

According to the Glendale General Plan, there is no habitat conservation plan or natural community conservation plan in the City of Glendale. There is a Significant Ecological Area (SEA) within the Verdugo Mountains, which is implemented with the intention to preserve designated sensitive areas. However, the Project is not located within the SEA. As such, implementation of the Project would not conflict with the SEA program or other habitat conservation plans. No impact would occur. This issue will not be further analyzed in the EIR.

2.5 CULTURAL RESOURCES

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
CULTURAL RESOURCES: Would the Project:				
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?	☐	☐	☒	☐

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

No Impact

Impact Discussion

An archaeological survey and an architectural resource evaluation of the Grayson Power Plant were conducted in 2003 and 2016 respectively. The 2003 cultural resources survey of Unit 9, conducted by URS, did not identify any cultural resources. The *2016 Architectural Resource Evaluation of the Grayson Power Plant for the City of Glendale, California,* which can be found in Appendix A evaluates the structures constructed between 1941 and 1947 (the "2016 Resource Study"). The Grayson Power Plant was evaluated against the following criteria established for including a property on the California Register of Historic Resources (CRHR):

> CRHR Criterion 1: Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States;
>
> CRHR Criterion 2: Associated with the lives of persons important to local, California or national history;

> CRHR Criterion 3: Embodies the distinctive characteristics of a type, period, region, or method of construction or represents the work of a master or possesses high artistic values; and
>
> CRHR Criterion 4: Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

The City of Glendale also provides a series of criteria for evaluating properties for inclusion on the Glendale Register of Historic Resources (GRHR). These criteria are aligned with those presented by the state for including a property on the CRHR. They include the following:

> GRHR Criterion 1: Is the proposed historic resource identified with important events in a national, state, or city history, or does it exemplify significant contributions to the broad cultural, political, economic, social, or historic heritage of the nation, state, or city?
>
> GRHR Criterion 2: Is the proposed historic resource associated with a person, persons, or groups who significantly contributed to the history of the nation, state, region, or city?
>
> GRHR Criterion 3: Does the proposed historic resource embody the distinctive and exemplary characteristics of an architectural style, architectural type, period, or method of construction; or present a notable work of mater designer, builder or architect whose genius influenced his or her profession; or possess high artistic values?
>
> GRHR Criterion 4: Has the proposed historic resource yielded, or have the potential to yield, information important to archaeological pre-history or history of the nation, state, region, or city?
>
> GRHR Criterion 5: Does the proposed historic resource exemplifies the early heritage of the city?

While the Project does possess potential significance under the State Criteria or Glendale Criteria, a lack of integrity under all aspects of integrity recognized by the CRHR and implied within the Glendale Criteria undermines the property's ability to convey significance and precludes it from listing on both the State and local registers.

As developed in the historic context, the site was associated with significant advances in electrical generation and power in both Los Angeles and the City of Glendale. It also was an early example of a modern power plant in Los Angeles County (CRHR and GRHR Criterion 1). The Grayson Power Plant also appears to be eligible under CRHR and GRHR Criterion 2, because of its association with L.W. Grayson, who managed the plant during the City of Glendale's population boom from 1951-1970. In addition, as designed the Plant was reflective of a cohesive operational and industrial design structure, with industrial operations characterizing the site (CRHR and GRHR Criterion 3). In this regard, the historical attributes of the site have the potential

to present important information regarding electrical generation and operations of a bygone period (CRHR and GRHR Criterion 4).

The 2016 Resource Study evaluated the Project per the CRHR and GRHR and found the structures not eligible for listing on the State or local registers under CRHR Criterions 1, 2, 3, 4, and GRHR Criterion 5. Based on previous studies and the 2016 Resource Study, the Project would not cause a substantial adverse change to the significance of historical resources as defined in Section 15064.5, nor would the Project have impacts on significant local resources as defined in Chapter 15.20 of the City of Glendale Municipal Code. However, there is always a possibility that buried historic, cultural, or paleontological deposits could be found during construction and earth disturbing activities. In the event, buried historic, cultural, or paleontological deposits are discovered, regulatory compliance of State Health and Safety Code Section 7050.5 and Public Code Resources Code Section 5097.98 would be implemented. There would be no impact to historical resources. Therefore, this issue will not be further analyzed in the EIR.

b) *Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*

Less Than Significant Impact

Impact Discussion

Similar in respect to the above historical resources discussion, the potential to encounter archaeological resources appears to be very low because the Project area has been previously disturbed and altered by construction of the existing Grayson Power Plant. There were no archaeological resources identified during the 2003 survey and no other archaeological resources were documented within or adjacent to the Project area. Based on the findings in this study, the Project would not cause a substantial adverse change to the significance of archaeological resources as defined in Section 15064.5, nor would the Project have impacts on significant local resources as defined in Chapter 15.20 of the City of Glendale Municipal Code. However, there is always a possibility that buried historic, cultural, or paleontological deposits could be found during construction and earth disturbing activities. Therefore, in the event archeological resources are discovered, regulatory compliance of State Health and Safety Code Section 7050.5 and Public Code Resources Code Section 5097.98 would be implemented. This would be a less than significant impact. Therefore, this issue will not be further analyzed in the EIR.

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

Less Than Significant Impact

Impact Discussion

Similar in respect to the above discussion on historical resources and archaeological resources, the potential to encounter unique paleontological resources is very low since the Project area has been previously disturbed and considerably altered. However, there is always a possibility that during ground disturbing activities associated with the Project, buried historic, cultural, or paleontological deposits could be unearthed during construction. In the event buried historic, cultural, or paleontological deposits are unearthed, implementation of the below regulatory compliance would occur.

While the Project would be constructed in an area that has been considerably disturbed and/or altered, any extensive ground disturbing activities have the potential to encounter geologic formations that could potentially contain paleontological resources. In the event that potential paleontological resources are encountered during construction activities, all work must stop and a qualified paleontologist should be contacted immediately to assess the significance of the new find. Additionally, the following may be implemented in order to ensure that impacts are less than significant: 1) worker education training for all construction personnel regarding the significance of paleontological resources; 2) monitoring during construction by a qualified paleontologist; 3) screening of sediment samples for small fossil remains; 4) documentation and identification of newly identified resources and their handling.

Based on the foregoing, there would be a less than significant impact and this issue will not be further analyzed in the EIR.

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

Less Than Significant Impact

Impact Discussion

There is no evidence to suggest the Project site has been used for human burials. The California Health and Safety Code (Section 7050.5) states that if human remains are discovered onsite, no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98, including coordination with persons to be the descendants of the deceased Native Americans if the remains are identified as prehistoric. Adherence to applicable California Health and Safety Code and Public Resource Code requirements is standard for all Projects. Impacts associated with the disturbance of human remains would be a less than significant. Therefore, this issue will not be further analyzed in the EIR.

2.6 GEOLOGY AND SOILS

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
GEOLOGY AND SOILS: Would the Project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving?				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
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 of collapse?	☒	☐	☐	☐
d) Be located on expansive soil, as defined in the Uniform Building code (2016), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

a) 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?

No Impact

Impact Discussion

The Alquist-Priolo Earthquake Fault Zoning Act (Act) mitigates fault rupture hazards by prohibiting the location of structures for human occupancy across the trace of an active fault. The Act requires the State Geologist to delineate "Earthquake Fault Zones" along faults that are "sufficiently active" and "well defined." The boundary of an "Earthquake Fault Zone" is generally 500 feet from major active faults and from 200 to 300 feet from well-defined minor faults. These maps are distributed to all affected cities, counties, and State agencies for their use in developing planning policies and controlling renovation or new construction. Based on a review of the Map of the State of California Special Studies Zones (Burbank Quadrangle), effective January 1, 1979), the Project site is not identified as being within an Alquist-Priolo Earthquake Fault Zone. As such, no fault rupture impact would result from the implementation of this Project. This issue will not be further analyzed in the EIR.

ii. Strong seismic ground shaking?

Less Than Significant Impact

Impact Discussion

Like all of Southern California, the Project site has and would continue to be subject to ground shaking generated from activity on local and regional-faults. As identified above, the Project site is not within an earthquake fault zone. The Project site has the potential to be subject to seismic ground shaking and failure during a major earthquake along the San Andreas Fault. The intensity of the ground shaking would depend on the distance to the epicenter and the geology of the areas between the epicenter and the Project area.

In accordance with the California Building Code (California Code of Regulations, Title 24), seismic structure design requirements would be based on the Seismic Design Category (SDC) for the proposed structures, which is based on the Occupancy Category for the structure and on the level of expected soil modified seismic ground motion. Compliance with the seismic design requirements specified by the California Building Code would reduce the potential impacts from seismic ground shaking and ground failure on building occupants and structures to a less than significant level. This issue will not be further analyzed in the EIR.

iii. Seismic-related ground failure, including liquefaction?

Potentially Significant Impact

Impact Discussion

Liquefaction occurs when loose, unconsolidated, water-laden soils are subject to shaking, causing the soils to lose cohesion. According to the State of California Seismic Hazards Zones – Burbank Quadrangle Map (released March 25, 1999), the Project area is located within a liquefaction zone, which is defined as an area where historic occurrence of liquefaction or where local geological, geotechnical, and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required. Therefore, the Project may have a potentially significant impact. This issue will be further evaluated in the EIR.

iv. Landslides?

Less Than Significant Impact

Impact Discussion

According to the United States Geological Survey Map, the area contains no major landforms, is relatively flat, and contains no potential for landslides. Additionally, a review of the State of California Seismic Hazards Zones – Burbank Quadrangle Map (released March 25, 1999) indicates that the Project area is not located within an "Earthquake-Induced Landslides" zone, which is defined as an area where previous occurrence of landslide movement or local topographic, geological, geotechnical, and subsurface water conditions indicate a potential for permanent ground displacement such that mitigation as defined in Public Resources Code Section 2693(c) would be required. Impacts associated with landslides are anticipated to be less than significant. This issue will not be further analyzed in the EIR.

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

Potentially Significant Impact

Impact Discussion

During construction of the Project, there may be potential changes to the soil, due to excavation, grading, and filling. These changes may have the potential to result in soil erosion and loss of top soil. Construction may temporarily expose the soil to wind and/or water erosion. In addition, grading and excavation could potentially result in substantial soil erosion or loss of top soil. Therefore, the Project may have a potentially significant impact. This issue will be further evaluated in the EIR.

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 of collapse?

Potentially Significant Impact

Impact Discussion

The Project has the potential to be located on a geologic unit that could be geologically unstable and potentially result in lateral spreading, subsidence, liquefaction or collapse. Therefore, the Project may have a potentially significant impact. This issue will be further evaluated in the EIR.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building code (1997), creating substantial risks to life or property?

Less Than Significant Impact

Impact Discussion

Expansive soils generally have a significant amount of clay particles which can give up water (shrink) or take on water (swell). The change in volume exerts stress on buildings and other loads placed on these soils. The extent of shrink/swell is influenced by the amount and kind of clay in the soil. The occurrence of these soils is often associated with geologic units having marginal stability. The distribution of expansive soils can be widely dispersed and they can occur in hillside areas as well as low-lying alluvial basins. A Geotechnical Study was conducted at the site in September 2015. This investigation found that the near-surface soils encountered in the proposed construction area are predominantly sand with variable amounts of silt. Based on experience with these types of soils, the Plasticity index (PI) is expected to be less than 15 PI, determined in accordance with American Society for Testing Materials (ASTM) D4318. In addition, based on the portion of the soils passing a No. 200 sieve (75 micrometers [µm], it is expected to consist of silt particles greater than 5 micrometers (µm) in size. The Geotechnical Study concluded that the soils are not expansive, as identified in the Uniform Building Code (2016), and do not create substantial risks to life or property. Therefore, development of the Project would have a less than significant impact from shrink/swell potential, subsidence or differential settlement and substantial risks to life or property are not anticipated. This issue will not be further analyzed in the EIR.

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

Impact Discussion

The Project does not include any new construction of septic tanks or alternative wastewater disposal system. Therefore, there would be no impact. This issue will not be further analyzed in the EIR.

2.7 GREENHOUSE GAS EMISSIONS

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
GREENHOUSE GASES: Would the Project:				
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?	☒	☐	☐	☐

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

Potentially Significant Impact

Impact Discussion

Construction and operation of the Project could increase greenhouse gas (GHG) emissions which have the potential to either individually or cumulatively result in a potentially significant impact on the environment. However, the Project would potentially reduce the carbon footprint regionally by buying more brown energy and allowing integration of more renewables. The Project's carbon footprint would potentially be higher locally, but regionally would be potentially less. The Project may have a potentially significant impact and this issue will be further evaluated in the EIR.

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

Potentially Significant Impact

Impact Discussion

The Legislature enacted Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006, which was signed on September 27, 2006, to further the goals of Executive Order S-3-05 (Health and Safety Code, S38500 et seq.). AB 32 requires the California Air Resources Board (CARB) to adopt regulations to achieve statewide GHG emissions levels realized in 1990 by 2020. A longer range goal requires an eighty percent (80%) reduction in GHG emissions from 1990 levels by 2050. CARB adopted the 2020 statewide target and mandatory reporting requirements in December 2007 and a statewide scoping plan in December 2008 (the AB 32 Scoping Plan).

Implementation of the Project could potentially significantly conflict with applicable plan, policy, or regulation for the purpose of reducing emissions of GHG's. Cumulatively, the Project would potentially reduce the carbon footprint regionally. The Project may have a potentially significant impact and this issue will be further evaluated in the EIR.

2.8 HAZARDS AND HAZARDOUS MATERIALS

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☒	☐	☐	☐
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

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

Potentially Significant Impact

Impact Discussion

The Project would be located entirely within the existing Grayson Power Plant, an operating power plant. Implementation of the Project may involve the routine transport, use, or disposal of hazardous materials during demolition, construction, and operation. Therefore, the Project may have a potentially significant impact. This issue will be further evaluated in the EIR.

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?

Potentially Significant Impact

Impact Discussion

The Project is a power plant repowering project replacing existing generating units and ancillary facilities. Given that the Project would demolish existing long-standing structures that may contain asbestos and lead-based paint, workers and the public may be exposed to asbestos and lead via inhalation of demolition dust. The Project also has the potential to create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment should subsurface soil impacts be encountered during construction. Operation of the Project would also involve the use of hazardous materials that, if released, may create a significant hazard to the public or the environment. Therefore, the Project may have a potentially significant impact. This issue will be further evaluated in the EIR.

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

No Impact

Impact Discussion

The Project site is not located within a quarter mile of an existing school and therefore, does not have the potential to expose students to hazardous emissions such as diesel emissions during construction. Therefore, there would be no impact associated with this issue. This will not be further analyzed in the EIR.

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?

No Impact

Impact Discussion

The Project site is not included on a list of hazardous materials site identified by Government Code Section 65962.5. The Project site is within the boundary of the initial investigations for the San Fernando Valley Superfund Sites, which is an area of contaminated groundwater covering approximately 7 square miles beneath the North Hollywood neighborhood of the City of Los Angeles and the City of Burbank. The use of an alternate water supply and the operation of the groundwater treatment system in the North Hollywood and Burbank areas have reduced the potential of exposure to contaminated drinking water at the San Fernando Valley site and will continue to protect residents near this site while additional cleanup activities are planned and implemented. Regardless, the Project is not expected to result in encountering potentially impacted groundwater. Therefore, there would be no impact associated with this issue. This issue will not be further analyzed in the EIR.

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

Impact Discussion

There is no public airport or public use airports within the vicinity of the Project site. The Project site is not located within the Air Installation Compatible Use Zone (AICUZ). Therefore, the Project would not result in a safety hazard for people utilizing or working within the Project area. No impact would occur. This issue will not be further analyzed in the EIR.

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

No Impact

Impact Discussion

The Project site is not located within the vicinity of a private airstrip or heliport. Consequently, no impacts associated with this issue would occur. This issue will not be further analyzed in the EIR.

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

Less Than Significant Impact

Impact Discussion

The Project would be designed, constructed, and maintained in accordance with applicable standards associated with vehicular access, resulting in the provision of adequate vehicular access that would provide for adequate emergency access and evacuation. Construction activities that may temporarily restrict vehicular traffic would be required to implement adequate and appropriate standards to facilitate the passage of persons and vehicles through/around any required road closures. Adherence to these standards would reduce potential impacts related to this issue to a less than significant level. This issue will not be further analyzed in the EIR.

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

Impact Discussion

The Project site is not located within the wildfire hazard zone as specified by the City of Glendale General Plan. Areas surrounding the Project site consist of urban development with minimal ground cover or vegetation. Because of lack of abundant vegetation and the amount of industrial development within the vicinity of the Project site, on-site and adjacent areas do not have the capability to support a wildfire. Therefore, the Project does not have the potential to expose people or structures to a significant risk of loss, injury or death involving wildland fires. No impact would occur and this issue will not be further analyzed in the EIR.

2.9 HYDROLOGY AND WATER QUALITY

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
HYDROLOGY AND WATER QUALITY: Would the Project:				
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?	☐	☐	☐	☒

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

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

Potentially Significant Impact

Impact Discussion

The operating Grayson Power Plant is subject to a National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Industrial Activities, effective as of July 1, 2015 (CAS000001). The potential water quality impacts of Project operation are expected to be similar to those that exist under current power plant operation and would also require an Industrial NPDES General Permit. The Project would also have the potential to result in violation of water quality standards during construction by introducing sediment and construction materials/chemicals into stormwater (including impacted soils and asbestos/lead containing materials encountered during site demolition and preparation). Construction of the Project would require a Construction NPDES General Permit for Storm Water Discharges and notification to the SCAQMD pursuant to Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities). As the Project involves activities and materials during construction and operation that could contribute to stormwater quality impacts, it has been conservatively assumed that the Project has the potential to violate a water quality standard or waste discharge requirement. Therefore, the Project may have a potentially significant stormwater impact and this issue will be further evaluated in the EIR. It should be noted that the Project includes a stormwater infiltration component that may improve site drainage and groundwater recharge.

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)?

No Impact

Impact Discussion

There are currently two water wells on the Project site and the Grayson Power Plant uses approximately 20-acre feet of well water per year. The Project would entirely utilize recycled

water for generation process cooling thereby limiting groundwater use to domestic consumption by the plant staff and for emergency generation process cooling in the event service of recycled water from the Los Angeles-Glendale Water Reclamation Plant was interrupted. As a result, operation of the Project would utilize less groundwater and contribute more to groundwater recharge compared to existing Grayson Power Plant operation. Operation of the Project would therefore have a beneficial impact to groundwater resources. Construction of the Project does not include any component with the potential to deplete groundwater supplies or interfere substantially with groundwater recharge and would therefore have no impact. This issue will not be further analyzed in the EIR.

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?*

Potentially Significant Impact

Impact Discussion

The Project site does not contain any streams, rivers, or ephemeral drainage features nor would it alter the existing drainage pattern of adjacent Verdugo Wash or Los Angeles River. The Project site is located on developed lands with impervious services. Stormwater flows via surface sheet flow to existing localized gutters, catch basins, storm drain piping and outfalls to Verdugo Wash and Los Angeles River. The Project would include redevelopment of an existing site land use and equivalent amount of impervious surface subject to sheet flow. The Project also includes a stormwater infiltration component to improve site drainage and groundwater recharge potential compared to existing Grayson Power Plant operation. Operation of the Project would not substantially alter the existing drainage pattern of the site or area in a manner which would result in substantial erosion or siltation on- or off-site.

Construction of the Project would involve land disturbances that temporarily alter site drainage and expose site soils to erosion. Project construction has the potential to substantially alter the existing drainage pattern of the site or area in a manner which may result in substantial siltation off-site. This may have a potentially significant impact. This will be further evaluated in the EIR.

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?*

No Impact

Impact Discussion

The Project site is located on developed lands with impervious services. Stormwater flows via surface sheet flow to existing localized gutters, catch basins, storm drain piping and outfalls to

Verdugo Wash and Los Angeles River. The Project would include redevelopment of an existing site land use and equivalent amount of impervious surface subject to sheet flow. The Project also includes a stormwater infiltration component to improve site drainage and groundwater recharge potential compared to existing Grayson Power Plant operation. Operation of the Project would not substantially alter the existing drainage pattern of the site or area or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. Project construction does not include a component with the potential to increase surface runoff in a manner that would result in on- or off-site flooding. No impact related to this issue is anticipated to occur. This issue will not be further analyzed in the EIR.

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?*

Potentially Significant Impact

Impact Discussion

The Project does not include a component that would increase demand on stormwater drainage systems. Refer to response a) for a discussion on the Project's potential to contribute polluted runoff. This issue will be further analyzed in the EIR.

f) *Otherwise substantially degrade water quality?*

No Impact

Impact Discussion

The Project does not include a component with the potential to otherwise substantially degrade water quality. No impact would occur. This issue will not be further analyzed in the EIR.

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

No Impact

Impact Discussion

The Project is not within a 100-year flood hazard area as identified on the Flood Insurance Rate Map (FIRM; Panel 06037C1345F, effective 9/26/2008) generated by the Federal Emergency Management Agency (FEMA). The Project is also not within a 100-year Los Angeles River overtopping flood hazard area identified by the US Army Corps of Engineers Hydraulics and Floodplain Analysis of the Los Angeles River (US Army Corps of Engineers, 2016). The 2016 US Army Corps analysis indicates that overbank flow during a 100-year and 500-year storm event would impact Ferraro Fields on the southwest side of the Los Angeles River would not flood the Project site located on the opposite (northeast) side of the river. In addition, the Project does not involve

the construction of housing. Therefore, the Project would not place housing within a 100-year flood hazard area. No impact related to this issue is anticipated to occur. This issue will not be further analyzed in the EIR.

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

No Impact

Impact Discussion

See above response to g). No impacts would occur. This issue will not be further analyzed in the EIR.

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?

No Impact

Impact Discussion

There are no levees or dams within the vicinity of the Project site according to the City of Glendale General Plan and the Project site is not located within an inundation area or within the 100-year Los Angeles River overtopping area identified by the US Army Corps of Engineers. Therefore, the Project would have no impact related to the exposure of people or structures to flooding risks, including flooding as a result of the failure of a levee or dam. This issue will not be further analyzed in the EIR.

j) Inundation by seiche, tsunami, or mudflow?

No Impact

Impact Discussion

A tsunami is a series of waves generated in a body of water by a pulsating or abrupt disturbance that vertically displaces water. Inundation of the Project site by a tsunami is highly unlikely as the Project site is more than 15 miles from the Pacific Ocean. Seiches are oscillations in enclosed bodies of water that are caused by a number of factors, most often wind or seismic activity. There are no enclosed bodies of water within the vicinity of the Project. Because the Project site is not located adjacent to any enclosed bodies of water, no seiche-related flooding is anticipated to occur on-site. Due to the relatively flat topography in the vicinity of the Project site, it is unlikely that a mudflow would impact the site. There would be no impact from inundation, seiche, tsunami, or mud flow. These issues will not be further analyzed in the EIR.

2.10 LAND USE AND PLANNING

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
LAND USE AND PLANNING: Would the project:				
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?	☐	☐	☐	☒

a) Physically divide an established community?

No Impact

Impact Discussion

The Project would be replacing existing generating units and ancillary facilities and would not physically divide an established community. The existing power plant is in an industrial area of the City and there are no existing residential uses located on the property. The Project would not entail the displacement of any residential uses or the use of any land designated for residential uses. Therefore, the Project would have no impact and would not disrupt or physically divide an established community. This issue will not be further analyzed in the EIR.

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

No Impact

Impact Discussion

The Projects is consistent with surrounding development and does not conflict with the adopted plans for the purpose of avoiding or mitigating an environmental effect. The Project is a permitted use in the Industrial zone and is not anticipated to conflict with any applicable land use plan. Therefore, the Project would have no impact related to this issue. This issue will not be further analyzed in the EIR.

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

No Impact

Impact Discussion

According to the Glendale General Plan, there is no habitat conservation plan or natural community conservation plan in the City of Glendale. There is, however, a Sensitive Ecological Area (SEA) program in the City of Glendale, which is implemented with the intention to preserve these designated sensitive areas. According to the Glendale General Plan, the Grayson Repowering Project site is not located within the established SEA. As such, implementation of the Project would not conflict with the SEA program or other habitat conservation plans. Therefore, the Project would have no impact to local, regional, or State habitat conservation plans. This issue will not be further analyzed in the EIR.

2.11 MINERAL RESOURCES

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

a) 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

Impact Discussion

The Surface Mining and Reclamation Act of 1975 (SMARA) instituted mineral land classification by the State Geologist in order to identify and protect mineral resources in the State where incompatible land use would prevent mineral extraction, particularly in areas of urban expansion or other irreversible land uses. The following factors are used to classify mineral resource zones (MRZs) within a region:

- MRZ-1 - Areas where adequate geologic information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- MRZ-2 - Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.
- MRZ-3 - Areas containing mineral deposits for which the significance cannot be determined from available data.
- MRZ-4 - Areas where geologic information does not rule out either the presence or absence of mineral resources.

According to *Special Report 143: Part II - Classification of Sand and Gravel Resource Areas - San Fernando Valley Production-Consumption Region* (1979) and *Report 94-14: Update of Mineral Land Classification of Portland Cement Concrete Aggregate in Ventura, Los Angeles, and*

Orange Counties, California, Part II - Los Angeles County (1994) the Project site is located in an MRZ-2 for sand, gravel, and Portland cement concrete (PCC) aggregate. However, the Project site is located within a substantially industrial area surrounded by existing industrial uses, limiting its potential for mineral resource conservation or extraction. No mineral resource extraction, recovery, or processing activities underway on or adjacent to the Project site. The site is not designated in the City's General Plan or Zoning Code for any extractive use. Implementation of the Project would therefore have no impact on the availability of known mineral resources in the Project vicinity currently available for extraction. This issue will not be further analyzed in the EIR.

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

Impact Discussion

The Project site is located within a substantially industrial area surrounded by existing industrial uses, limiting its potential for mineral resource conservation or extraction. The Project site is not classified as an area of locally important mineral resource recovery. As such, no impact related to this issue would occur. This issue will not be further analyzed in the EIR.

2.12 NOISE

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
NOISE: Would the project:				
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 ground borne vibration or ground borne noise levels?	☒	☐	☐	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the Project Area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the Project Area to excessive noise levels?	☐	☐	☐	☒

a) 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?

Potentially Significant Impact

Impact Discussion

Noise increases from the Project could be generated on a short-term and long-term basis. Short-term noise levels are associated with demolition, excavation, grading, and building construction. Short-term noise levels would be higher than existing ambient noise levels in the Project area, but would cease upon Project completion. Long-term noise levels would be associated with the power plant operation and maintenance. Therefore, the Project may have a potentially significant impact. This issue will be further evaluated in the EIR.

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

Potentially Significant Impact

Impact Discussion

Vibration refers to ground borne noise and perceptible motion. Typical sources of ground borne vibration are construction activities (e.g., blasting, pile driving, and operating heavy-duty earthmoving equipment), steel-wheeled trains, and occasional traffic on rough roads. Ground borne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors, where the motion may be discernable but without the accompanying effects (e.g., shaking of a building). Construction activities for the Project could create perceptible ground borne vibration. The Project may have a potentially significant impact. This issue will be further evaluated in the EIR.

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

Potentially Significant Impact

Impact Discussion

The Project includes the noise sources associated with operating a power plant. There is a potential that the Project could result in a permanent increase in ambient noise levels in the Project vicinity. Therefore, the Project may have a potentially significant impact. This issue will be further evaluated in the EIR.

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

Potentially Significant Impact

Impact Discussion

Temporary or periodic increases in ambient noise levels could occur during the construction of the Project. Because construction activities may generate noise in excess of City noise standards, the Project may have a potentially significant impact. This issue will be further evaluated in the EIR.

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

Impact Discussion

The Project is not within an airport land use plan. Therefore, no impacts to excessive noise levels as a result of airports in the vicinity of the Project site would occur. This issue will not be further analyzed in the EIR.

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

No Impact

Impact Discussion

The Project is not within the vicinity of a private airstrip. Therefore, no impacts to excessive noise levels as a result of private airstrips in the vicinity of the Project site would occur. This issue will not be further analyzed in the EIR.

2.13 POPULATION AND HOUSING

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

a) 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

Impact Discussion

The Project does not include new residents or extend any major infrastructure that could support additional development. The incremental increase in power would serve existing demand, meet reliability requirements, and allow for increased integration of renewable energy sources into GWP's portfolio to meet RPS requirements. The Project does not include new homes or businesses. No new substantial employment would be generated by the Project that could potentially contribute to additional demand for housing or services in the surrounding area. In addition, the regional area has the required workforce that would commute daily to the Project site and would not require new housing infrastructure. The workforce required to operate the Project would be similar to that required to operate the existing power plant. Therefore, the Project would not have impacts related to population growth. This issue will not be further analyzed in the EIR.

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

No Impact

Impact Discussion

The Project would not result in the removal or demolition of any residential units because there are no existing residential units on the property. The Project would not entail the displacement of any residential uses or the use of any land designated for residential uses. No impacts would occur. This issue will not be further analyzed in the EIR.

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

No Impact

Impact Discussion

The Project would not result in the removal or demolition of any existing residential units because there are no existing residential uses on the property. The Project would not entail the displacement of any residential uses or the uses of any land designated for residential use. Therefore, the Project would not have impacts related to the displacement of people. This issue will not be further analyzed in the EIR.

2.14 PUBLIC SERVICES

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
PUBLIC SERVICES: Would the Project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impact, in order to maintain acceptable service ratios for any of the public services:				
i. Fire protection?	☐	☐	☐	☒
ii. Police protection?	☐	☐	☐	☒
iii. Schools?	☐	☐	☐	☒
iv. Parks?	☐	☐	☐	☒
v. Other public facilities?	☐	☐	☐	☒

a) *Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impact, in order to maintain acceptable service ratios for any of the public services:*

i. Fire protection?

No Impact

Impact Discussion

The City of Glendale Fire Department (GFD) provides fire and paramedic services to the Project site. The nearest fire station is Station 25 located at 353 N. Chevy Chase Drive, approximately two miles from the Project site. The Project would not cause an incremental increase in the need for fire service due to the Project's replacing of existing generating units and ancillary facilities. The Project is required to comply with all Fire Department standards and policies, including installation of public and private fire hydrants as specified by the Glendale Fire Department. The Project would comply with the City's latest standards and will therefore, improve the site's

existing conditions. For these reasons, the Project would have no impact. This issue will not be further analyzed in the EIR.

ii. Police protection?

No Impact

Impact Discussion

Existing law enforcement service in the area would adequately meet the demand for police protection services under the Project because repowering of the Grayson Power Plant would not require additional services beyond those currently provided. Therefore, the Project would have no impact. This issue will not be further analyzed in the EIR.

iii. Schools?

No Impact

Impact Discussion

The Project would not adversely impact schools because no population increase or shifts in population would occur as a result of the Project. The Project would not include any residential population or increase the number of employees at the facilities. Therefore, the Project would have no impact. This issue will not be further analyzed in the EIR.

iv. Parks?

No Impact

Impact Discussion

The Project would not entail the construction of residential or commercial uses that would result in an increase in park usage. The Project is not anticipated to contribute substantially to meet the need for additional parks. Therefore, Project would have no impact. This issue will not be further analyzed in the EIR.

v. Other public facilities?

No Impact

Impact Discussion

The Project is not anticipated to adversely affect the City's overall ability to provide services Citywide including school and library services. The Project would not create any significant

increase in demand for library services. Therefore, the Project would have no impact. This issue will not be further analyzed in the EIR.

2.15 RECREATION

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
RECREATION: Would the Project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
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?	☐	☐	☐	☒

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact

Impact Discussion

The Project would not entail the construction of residential or commercial uses that would result in an increased use of area parks or recreation facilities. There are no increases to the use of existing neighborhood or regional parks or other recreation facilities such that substantial physical deterioration of the facility would occur or be accelerated. Therefore, no impacts related to the physical deterioration of a park associated with the Project would occur. This issue will not be further analyzed in the EIR.

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

Impact Discussion

The Project does not include the construction of recreational facilities either on or off the Project property. Therefore, the Project would have no impacts. This issue will not be further analyzed in the EIR.

2.16 TRANSPORTATION AND TRAFFIC

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
TRANSPORTATION AND 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?	☒	☐	☐	☐
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?	☐	☐	☐	☒

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?

Potentially Significant Impact

Impact Discussion

Project construction could potentially significantly increase vehicular traffic that could affect the performance of the surrounding street system as a result of construction worker trips, off-site staging areas, as well as haul truck and delivery trips. The Project could potentially significantly impact on applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of a circulation system during construction and operation. Therefore, the Project may have a potentially significant impact. This issue will be further evaluated in the EIR.

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?*

Potentially Significant Impact

Impact Discussion

The Project could result in a potentially significantly increase in traffic within the vicinity of the site. Construction workers, delivery traffic, and off-site staging areas could cause increased traffic generation in level of service at intersections or street segments in the vicinity of the Project site. Street segments and intersections impacted by the Project will be further evaluated in the EIR including an analysis of the Los Angeles County Congestion Management Program requirements. Therefore, there may be a potentially significant impact to the applicable congestion management program. This issue will be further evaluated in the EIR.

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

Impact Discussion

There are no private airstrips within the vicinity of the Project site. Therefore, the Project would not cause any change in the air traffic patterns during construction or operation. No impact would occur and this issue will not be further analyzed in the EIR.

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

Less Than Significant Impact

Impact Discussion

The Project would be constructed in the existing boundaries of the Grayson Power Plant in which deliveries of large equipment do not require modifications or changes to existing City streets or state highways. Roadway improvements in and around the Project site have not changed and would continue to satisfy all City requirements for street widths, corner radii, intersection control, and design standards tailored specifically to site access requirements. A less than significant impact would occur. This issue will not be further analyzed in the EIR.

e) Result in inadequate emergency access?

Less Than Significant Impact

Impact Discussion

The Project's emergency access would not change in design from the existing and approved Grayson Power Plant. The Project would be required to be designed, constructed, and maintained to provide for adequate emergency access and evacuation. Construction activities, which may temporarily restrict vehicular traffic, would be required to implement adequate and appropriate measures to facilitate the passage of persons and vehicles through/around any required road closures. The Project design would be submitted to and approved by the City's Fire and Police Departments prior the issuance of construction permits. A less than significant impact related to this issue would occur. This issue will not be further analyzed in the EIR.

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?

No Impact

Impact Discussion

The Project site is located in an industrial area that contains an extensive network of sidewalks, bike plans, and public transit system. The Project as designed would not conflict with adopted transportation policies as indicated in the City General Plan. No impact associated with this issue would occur. This issue will not be further analyzed in the EIR.

2.17 TRIBAL CULTURAL RESOURCES

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
TRIBAL CULTURAL RESOURCES: 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	☐	☐	☐	☒
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.	☒	☐	☐	☐

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

No Impact

Impact Discussion

Please refer to Section 2.5, response (a). This issue will not be further analyzed in the EIR.

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.

Potentially Significant Impact

Impact Discussion

The City has notified California Native American tribes who have formally requested notification on CEQA projects under Assembly Bill 52 that the City proposes to undertake the Project. This

notification affords California Native American tribes the opportunity for consultation pursuant to Public Resources Code § 21080.3.1. This Initial Study was prepared and released for public review during the 30 day period that each California Native American tribe has after receipt of the above referenced notification to request consultation. As a result, it is currently assumed that the proposed Project may have a potentially significant impact pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1 to a resource considered significant to a California Native American tribe. This issue will be further evaluated in the EIR.

2.18 UTILITIES AND SERVICE SYSTEMS

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
UTILITIES AND SERVICE SYSTEMS: Would the Project:				
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?	☐	☐	☒	☐

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

No Impact

Impact Discussion

Wastewater discharge from operation of the Project would be regulated by an Industrial Wastewater Discharge Permit, which establishes pretreatment standards for wastewater effluent prior to discharge into the City of Glendale sewer system. The Grayson Power Plant currently operates under an existing Industrial Wastewater Discharge Permit. The existing Industrial Wastewater Discharge Permit would be modified to address the new process of wastewater generation and treatment from the Project. Compliance with the Industrial Wastewater Discharge Permit requirements would ensure that the Project would not exceed the wastewater treatment requirements of the City of Glendale or RWQCB. Therefore, the project would not exceed wastewater treatment requirements of the applicable RWQCB. No impact associated with this issue would occur. This issue will not be further analyzed in the EIR.

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

Impact Discussion

The Project will rely on recycled water for generation process cooling and will result in a reduction of groundwater use compared to existing power plant operation. The volume of recycled water necessary for the Project's wet cooling system is within the City's allocation from the Los Angeles-Glendale Water Reclamation Plant that maintains a connection infrastructure with the Grayson Power Plant. The Project may also incorporate on-site water treatment in support of cooling tower operation. The project would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. No impact associated with this issue would occur. This issue will not be further analyzed in the EIR.

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?*

No Impact

Impact Discussion

The Project site is located on developed lands with impervious services. Stormwater flows via surface sheet flow to existing localized gutters, catch basins, storm drain piping and outfalls to Verdugo Wash and Los Angeles River. The Project would include redevelopment of an existing

site land use and equivalent amount of impervious surface subject to sheet flow. The Project also includes a stormwater infiltration component to improve site drainage and groundwater recharge potential compared to existing Grayson Power Plant operation. The Project would not require or result in the construction of new off-site storm water drainage facilities or expansion of existing facilities. No impact associated with this issue would occur. This issue will not be further analyzed in the EIR.

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

Less than Significant Impact

Impact Discussion

Grayson has had a 600 acre-feet per year allocation of recycled water since 1978. Recycled water use at Grayson in 2015, was approximately 370 acre-feet per year. The Project would eliminate the use of potable water in the generation process by increasing use of recycled water. The potential increase of 230 acre-feet per year of recycled water from the Project is within Grayson's allocation. In addition, the volume of recycled water being used by the City has declined in recent years as golf courses and other large water users have reduced their demand for water. There are sufficient water supplies available to serve the Project from existing entitlements. A less than significant impact associated with this issue would occur. This issue will not be further analyzed in the EIR.

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

Impact Discussion

The Project will rely on recycled water from the Los Angeles-Glendale Water Reclamation Plant for generation process cooling. The volume of recycled water necessary for the Project's wet cooling system is within the City's allocation from and treatment capacity of the Los Angeles-Glendale Water Reclamation Plant that maintains a connection infrastructure with the Grayson Power Plant. No impact associated with this issue would occur. This issue will not be further analyzed in the EIR.

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

Less Than Significant Impact

Impact Discussion

The majority of solid waste generated in the City of Glendale is transported to Scholl Canyon Landfill, which is owned by the City of Glendale. Scholl Canyon Landfill has the capacity to accept solid waste until 2021 based on current rate of 1,400 tons per day (TPD). Solid waste generation may increase during the demolition and construction phase of the Project. The Project would include the demolition of the Grayson Power Plant Boiler Building, replacing Cooling Towers 1 through 5, and replacing the generation units, designated as Unit 8A and 8B/C, which would generate demolition waste including asphalt, concrete, and scrap metal (See Figure 3). The Project would be required to comply with the City's Construction and Demolition Debris Diversion Program (Chapter 8.58 of the Glendale Municipal Code), which requires the applicant to complete and submit a waste reduction and recycling plan to the city's building official prior to issuance of a building or demolition permit. Compliance with the City's Construction and Demolition Debris Diversion Program would ensure that construction and demolition waste disposal would result in a less than significant impact on the landfills serving the Project.

Similar to existing conditions on the project site, waste generated by operation of existing power generating units and associated facilities would be properly managed and/or disposed of in compliance with federal, state, and local statutes and regulations related to solid and hazardous waste management. Because the Project involves the replacement of the existing generation units and would not increase the number of employees on site, the Project would not result in increased waste disposal over existing conditions. The minimal hazardous waste that would be generated during project construction would be transported to a Class 1 landfill in California. The amount of waste disposed would remain similar to existing conditions and additional capacity would not be required. Therefore, operational impacts of the Project would be less than significant. This issue will not be further analyzed in the EIR.

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

Less Than Significant Impact

Impact Discussion

In response to State-mandated waste reduction goals, and as a part of the City of Glendale's ongoing efforts to reduce the landfill disposal of waste, the City adopted Ordinance No. 5478 in 2005 (Chapter 8.58 of the Glendale Municipal Code). The ordinance as amended by Ordinance No. 5627 in 2008, requires that the waste from certain construction and/or demolition projects be either taken to a certified mixed debris recycling facility or to a recycler that will divert all the accepted waste, such as concrete, metal, etc. from the landfill. The Project would be required to comply with applicable solid waste ordinances, and thus, would meet Glendale's and California's solid waste diversion regulations. In addition, the Project would comply with Chapter 8.58 of the Glendale Municipal Code and design requirements for refuse storage areas. Therefore, the Project would follow applicable federal, state, and local statues and regulations related to solid waste and impacts would be less than significant. This issue will not be further analyzed in the EIR.

2.19 ENVIRONMENTAL JUSTICE

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
ENVIRONMENTAL JUSTICE: Would the Project:				
a) Substantially increase project air emissions that disproportionately impact low-income or minority communities in proximity to the project site?	☐	☐	☐	☒
b) Degrade the health and safety of low-income or minority communities disproportionately?	☐	☐	☐	☒
c) Fail to provide for or encourage effective participation of low-income or minority communities adjacent to, or in the affected vicinity of, the project area in the environmental review and decision-making process for this project?	☐	☐	☐	☒
d) Cause a disproportionately high and adverse impact on low-income or minority communities adjacent to or in the affected vicinity of the project area?	☐	☐	☐	☒

California was one of the first states in the Nation to pass legislation to codify environmental justice in state statute. Environmental Justice is defined in statute as, "The fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations and policies." The California Resources Agency developed an Environmental Justice Policy that applies to all of its Departments, Boards, Commissions, Conservancies and Special Programs. The California Energy Commission has been integrating environmental justice into its siting process since 1995, as part of its thorough CEQA analysis of applications for siting power plants and related facilities.

Potential environmental justice populations are defined as areas where the minority or low income population percentage is meaningfully greater than the minority or low-income population percentage in the general population. For the purposes of this analysis, “meaningfully greater” is defined as approximately 10 percentage points greater than that of the county-wide average. Based on US Census data, 14.7% of individuals residing in Glendale are living below the poverty line, compared to 18.7% in Los Angeles County. The minority population in Glendale for those reporting only one race was 22.6%, compared to 27.9% for Los Angeles County (US Census Bureau, 2010). This data shows that Glendale is not considered an environmental justice community.

a) Substantially increase project air emissions that disproportionately impact low-income or minority communities in proximity to the project site?

No Impact

Impact Discussion

Glendale is not considered an environmental justice community and the Project would therefore not substantially increase project air emissions that disproportionately impact low-income or minority communities in proximity to the project site. No impact associated with this issue would occur. This issue will not be further analyzed in the EIR.

b) Degrade the health and safety of low-income or minority communities disproportionately?

No Impact

Impact Discussion

Glendale is not considered an environmental justice community and the Project would therefore not degrade the health and safety of low-income or minority communities disproportionately. No impact associated with this issue would occur. This issue will not be further analyzed in the EIR.

c) Fail to provide for or encourage effective participation of low-income or minority communities adjacent to, or in the affected vicinity of, the project area in the environmental review and decision-making process for this project?

No Impact

Impact Discussion

Glendale is not considered an environmental justice community. No impact associated with this issue would occur. This issue will not be further analyzed in the EIR.

d) Cause a disproportionately high and adverse impact on low-income or minority communities adjacent to or in the affected vicinity of the project area?

No Impact

Impact Discussion

Glendale is not considered an environmental justice community. No impact associated with this issue would occur. This issue will not be further analyzed in the EIR.

2.20 SOCIOECONOMICS

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
SOCIOECONOMICS: Would the Project:				
a) Substantially alter the existing economic characteristics of the vicinity and region affected by construction and operation of the project?	☐	☐	☐	☒
b) A substantial decrease in the expenditures for locally purchased materials for the construction and operation phases of the project?	☐	☐	☐	☒
c) Result in the increase of population and housing caused directly and indirectly by the project?	☐	☐	☐	☒

a) Substantially alter the existing economic characteristics of the vicinity and region affected by construction and operation of the project?

No Impact

Impact Discussion

The Project involves repowering an existing power plant which would not change the economic characteristics in the vicinity or the region. The local and regional economy would support the construction and operation of the Project. The Project would require a maximum workforce of approximately 250 workers, which would cause no adverse impact on the socioeconomic character of the City of Glendale. The local economics of the City of Glendale would potentially improve with the purchase of local resources and employment of a local workforce. Therefore, the Project would not alter the economic base, fiscal resources, and economic characteristics of the vicinity and region affected by the construction and operation of the Project. There would be no impact. This issue will not be further analyzed in the EIR.

b) A substantial increase in the expenditures for locally purchased materials for the construction and operation phases of the project?

No Impact

Impact Discussion

The Project would not substantially decrease the expenditures for locally purchased materials for the construction phase of the Project. In fact, the local economics of the City of Glendale would potentially improve with the purchase of local resources and employment of a local workforce. There would be no impact. This issue will not be further analyzed in the EIR.

c) *Result in the increase of population and housing caused directly and indirectly by the project?*

No Impact

Impact Discussion

The Project would not increase the population and housing of the surrounding Project area by producing more electricity for developing housing Projects within the City of Glendale. The Project would not be producing more electricity. In fact, the Project is repowering the existing Grayson Power Plant. In addition, a potential increase in the number of workers to be employed each month by craft during construction and for operations would not increase the population and housing of the surrounding community. There would be no impact. This issue will not be further analyzed in the EIR.

3.0 PROPOSED FINDING

ENVIRONMENTAL DETERMINATION

On the basis of this initial evaluation: ☐
I find that the proposed Grayson Repowering Project **COULD NOT** have a significant effect on the environment, and a **NEGATIVE DECLARATION** would be prepared.

I find that although the proposed Grayson Repowering Project could have a significant effect on the environment, there would not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the Project. A **MITIGATED NEGATIVE DECLARATION** would be prepared. ☐

I find that the proposed Grayson Repowering Project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required. ☒

I find that the proposed Grayson Repowering Project **MAY** have a significant effect 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, if the effect is a "potentially significant impact" or "potentially significant unless mitigated." An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed. ☐

I find that although the proposed Grayson Repowering 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**, nothing further is required. ☐

Erik Krause **12/15/2016**

Signature: **Date:**

4.0 REFERENCES

City of Los Angeles, 2016, Readers Guide LA River Ecosystem Restoration Project, available at http://eng.lacity.org/techdocs/emg/docs/lariver/LA_River_Reader_Guide.pdf

United States Army Corps of Engineers, 2016, Hydraulics Report Floodplain Analysis Los Angeles River: Barham Boulevard to First Street, available at http://eng.lacity.org/projects/LARIVER_Glendale_Narrows/docs/LAR_FPMS_Hydraulic_Report_FINAL_October2016_Text.pdf

http://eng.lacity.org/projects/LARIVER_Glendale_Narrows/docs/LAR_FPMS_Hydraulic_Report_FINAL_October2016_Plates.pdf

United States Census Bureau, 2010, Quick Facts, available at https://www.census.gov/quickfacts/table/PST045215/0630000,06037,00

Historic Resource Inventory and Evaluation Grayson Power Plant for City of Glendale, California

~~Architectural Resource Evaluation of the Grayson Power Plant for City of Glendale, California~~

Stantec Project No.:
2057123300

Prepared for:
The City of Glendale,
Department of Water and Power
141 N. Glendale Avenue
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95670-6150

February 15, 2016
(Updated January 2018)

Sign-off Sheet

This document entitled ~~Architectural Resource Evaluation of the Grayson Power Plant for City of Glendale, California~~ **Historic Resource Inventory and Evaluation Grayson Power Plant for City of Glendale, California** was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of City of Glendale (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Prepared by 
(signature)

Corri Jimenez, MS

Prepared by 
(signature)

Garret Root, MA

Reviewed by 
(signature)

Michelle Cross, MA, RPA

Stantec

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Executive Summary

The Grayson Power Plant (Plant) is owned by the City of Glendale and is located in Glendale, Los Angeles County, California. ~~The Plant includes five cooling towers and associated units, as well as a generator designated as Unit 8A, 8B, and 8C, as part of a repowering project; Unit 9, built in 2003, will be one of the remaining structures on the site that will be retained as well as a garage, parking canopies, warehouse, etc., which were more recently constructed.~~ The majority of the structures located at the Plant were completed before 1977, and **are proposed** ~~need~~ to be replaced with new ~~reliable, efficient, and cleaner~~ equipment. The existing generation facilities and their related infrastructure, with the exception of Unit 9, will be replaced with new generation facilities that meet today's electrical and structural standards and are necessary to meet current and future energy loads and support the renewable power generation that Glendale is either building or buying. The net increase in Plant capacity will be less than 50 megawatts; therefore, this project will not fall under the jurisdiction of the California Energy Commission (CEC). The City of Glendale will serve as the lead agency for California Environmental Quality Act (CEQA) compliance.

On August 17-18, 2015, Stantec Consulting Services, Inc. (Stantec) conducted ~~an architectural survey and inventory study~~ **a Historic Resource Inventory and Evaluation** Report on behalf of the City of Glendale Department of Water and Power (GWP) for the proposed **repowering** ~~improvements~~ to the Plant. Based on the historical and comparative information, the Plant is generally reflective of the mid-twentieth century development of Los Angeles County.

~~The Plant was evaluated per the California Register of Historical Resources (CRHR) and Glendale Register of Historic Resources. While the Plant does possess potential significance under the CRHR and Glendale Register of Historic Resources Criterions 1, 2, 3, and 4, a lack of integrity under all aspects of integrity recognized by the CRHR, and implemented for the City of Glendale Register of Historic Resources which is silent on aspects of integrity, undermines the property's ability to convey importance/significance for either the state or local registers. Integrity has been significantly diminished at the site due to continuous improvements such alterations, changes, additions, and demolition of the buildings and structures to respond to and cope with demand and need for efficient energy production for the City of Glendale. Based on the results of this evaluation, Stantec finds the Grayson Power Plant not eligible for the CRHR or City of Glendale Register of Historic Resources under Criterions 1, 2, 3, or 4.~~ **The plant was evaluated per the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), and Glendale Register of Historic Resources. While the Plant does possess significance for the NRHP Criteria C and CRHR Criterion III for its engineering, the numerous alterations and expansions have degraded its integrity negating its eligibility. Integrity has been significantly diminished at the site due to continuous improvements such as alterations, changes, additions, and demolition of the buildings and structures. Further, the power plant lacks significance for the Glendale Register of Historic Resources as noted in Section 6 below. Based on the results of this**

evaluation, Stantec finds the Grayson Power Plant not eligible for the NRHP under all criteria, CRHR under all criterion, the City of Glendale Register of Historic Resources, or as a historic resource for the purposed of CEQA.

Abbreviations

AC	Alternating Current
ADI	Area of Direct Impact
APE	**Area of Potential Effect**
ASCE	American Society of Civil Engineers
CCIC	South Central Coastal Information Center
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CHRIS	California Historical Research Information Centers
CRHR	California Register of Historical Resources
~~CRHR~~	~~California Register of Historical Resources~~
DC	Direct Current
DPR	California Department of Parks and Recreation
EDR	Environmental Data Resources, Inc.
ESA	Environmental Site Assessment
GWP	City of Glendale Department of Water and Power
HVCR	Heating/Ventilating/Cooling/Refrigeration
~~L.W.~~	~~Lauren W. Grayson~~
NEPA	National Environmental Policy Act
NETR	Nationwide Environmental Tile Research, LLC
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
Plant	Grayson Power Plant
RPA	Registered Professional Archaeologist

1.0 INTRODUCTION

1.1 PROJECT LOCATION AND DESCRIPTION

On August 17-18, 2015, Stantec conducted ~~an architectural history survey~~ **a Historic Resource Inventory** and Inventory Study ~~inventory study~~ on behalf of the City of Glendale Department of Water and Power (GWP) for the proposed **repowering** ~~improvements~~ to the Grayson Power Plant (Plant) located in Glendale, Los Angeles County, California. The Plant's project area is in the City of Glendale and is located at 800 Air Way in Glendale, California. The approximately 11-acre property is bounded by the Southern Pacific Railroad tracks and San Fernando Road to the north and northeast, and Fairmont Avenue to the south and southwest. Beyond Fairmont Avenue to the southeast is the Los Angeles River (Figure 1).

The Plant consists of a 1941-47 boiler building with supplemental additions, five cooling towers and units, three gas-fired buildings (Unit 8A, 8B, and 8C), and two switching yards (Kellogg and Glendale) located to the east and southeast (Figures 2-8). Additional auxiliary support structures are also present including maintenance shops, a warehouse, a substation, and other control buildings.

~~The~~ GWP plans to demolish the Plant's boiler building and subsequent additions, five cooling towers, and the generator **units** designated as Unit 1, 2, 3, 4, 5, 8A, 8B~~, and 8C~~ as part of a repowering project (Figure 2). A majority of the buildings located at the Plant, with the exception of Unit 9, which is a simple cycle peaking unit built in 2003, were constructed on or before 1977, and have reached their useful life; therefore, need to be replaced with new reliable, efficient, and cleaner equipment. The repowering of the Plant is necessary to meet current and future energy efficiency for GWP as well as support the renewable power generation that Glendale is either building or buying.

The GWP is proposing to replace all the existing generation facilities and their related infrastructure, with the exception of Unit 9, by removing all existing aboveground and underground equipment and facilities and build a new generation facility. ~~The net increase in Plant capacity will be less than 50 megawatt; therefore, this project will fall under state jurisdiction of the California Energy Commission (CEC), and will not trigger a federal nexus of Section 106 of the National Historic Preservation Act (NHPA). The City of Glendale will serve as the lead state agency for California Environmental Quality Act (CEQA) compliance.~~ **The Project is not considered on "undertaking" subject to Section 106 of the National Historic Preservation Act (NHPA) and is not subject to compliance with the National Environmental Policy Act (NEPA). The Project would require National Pollutant Discharge Elmination System permit coverage for stormwater discharges in accordance with the U.S. Clean Water Act and an air permit in accordance with the U.S. Clean Air Act. The U.S. Environmental Protection Agency delegated authority to issue these permits in the Project to the State Water Resources Control Board and South Coast Air Quality Management District, respectively. As issuance of these permits are**

subject to State and local regulation administered pursuant to a delegation or approval by a Federal agency, they are not considered to be "undertakings" subject to NHPA Section 106 review. Specifically, the clause in the statutory definition of an "undertaking" which previously included projects and activities subject to State and local regulation administered pursuant to a delegation or approval by a Federal agency was removed from the statute in 2004. The Project is therefore not subject to NHPA Section 106 or NEPA review. The net increase in Plant capacity will be less than 50 megawatts; therefore, this project is not subject to California Energy Commission (CEC), site licensing jurisdiction and the City of Glendale is the California Environmental Quality Act (CEQA) Lead Agency. However, in effort of completeness, this inventory and evaluation addressed the criteria of the NRHP, CRHR and the City of Glendale local criteria. This inventory and evaluation is intended to comply with Section 15064.5(a) (2)-(3) of the California Environmental Quality Act (CEQA). The City of Glendale will serve as the lead state agency for CEQA compliance.

1.2 AREA OF ~~DIRECT IMPACT~~ POTENTIAL EFFECT

The Area of **Potential Effect (APE) is delineated by the property boundary (see Figure 2).** ~~Direct Impact (ADI) is designated as the buildings directly affected by the proposed undertaking and include the Grayson Power Plant Boiler Building, five cooling towers, generator buildings (Unit 8A, 8B, and 8C) and switching yards (see Figure 2).~~

The Project does not include a Federal action or undertaking that is subject to project-specific NEPA or NHPA Section 106 compliance. The Project involves City funding and a discretionary permit from the South Coast Air Quality Management District. As a result, the primary purpose of this evaluation is to determine if there are historic resources located within the APE in consideration of CEQA which includes an evaluation of the historic significance of the Grayson Power Plant for eligibility under the CRHR and City of Glendale Register of Historic Resources. As part of the analysis, a California Department of Parks and Recreation (DPR) 523 Series cultural resource form is included as documentation (see Appendix A). While the Project does not include a Federal undertaking, this evaluation also analyzes the power plant's potential significance to the NRHP. ~~Currently, the project has no federal nexus, and follows CEQA regulations in reviewing resources potentially eligible to the CRHR, as well as the City of Glendale Register of Historic Resources. As part of the analysis, a California Department of Parks and Recreation (DPR) 523 Series cultural resource form is included as documentation (see Appendix A).~~

1.3 DEFINITIONS

Please note that the terms "historic" and "historical resource" are used in this report for the description of architectural features and for evaluative purposes. The term "historic" is used to define something that is 45 years old or older. Buildings and features less than 45 years of age at the Grayson Power Plant were not evaluated for historical importance/significance as a potential "historical resource" **for the purposes of the NHPA of 1966, as amended,** CEQA and the

City of Glendale Register of Historic Resources. The term "historical resource" is used to describe a property that meets the terms of the definitions in Section 21084.1 of the CEQA Statute and Section 15064.5 of the CEQA Guidelines. "Historical Resources" include properties listed in or formally determined eligible for listing in the California Register of Historical Resources, or listed in an adopted local historic register. The term "local historic register" or "local register of historical resources" means a list of resources that are officially designated or recognized as historically significant by a local government pursuant to resolution or ordinance. "Historical Resources" also includes resources identified as significant in an historical resource survey meeting certain criteria.

INTRODUCTION

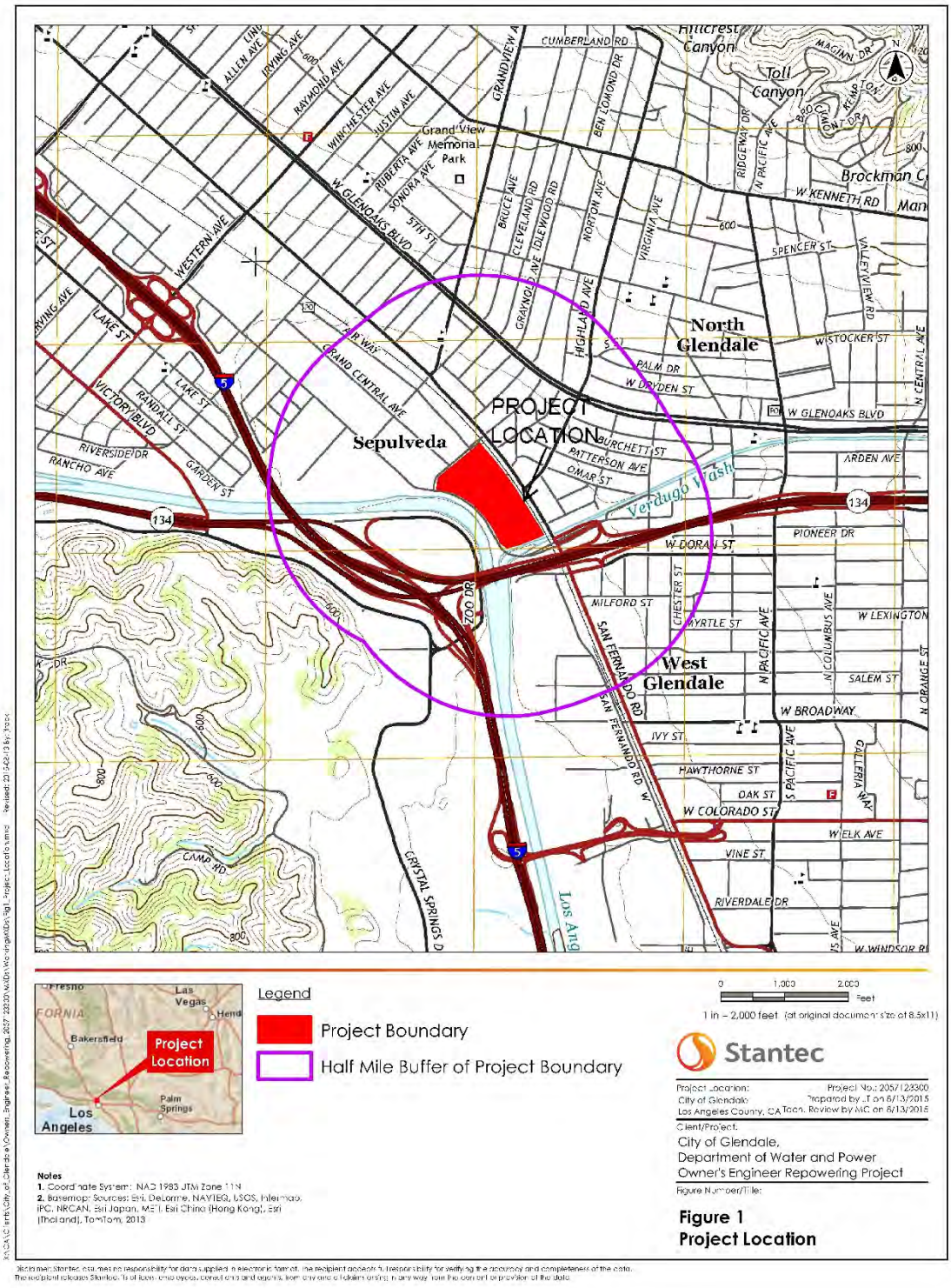


Figure 1 Project Location

INTRODUCTION

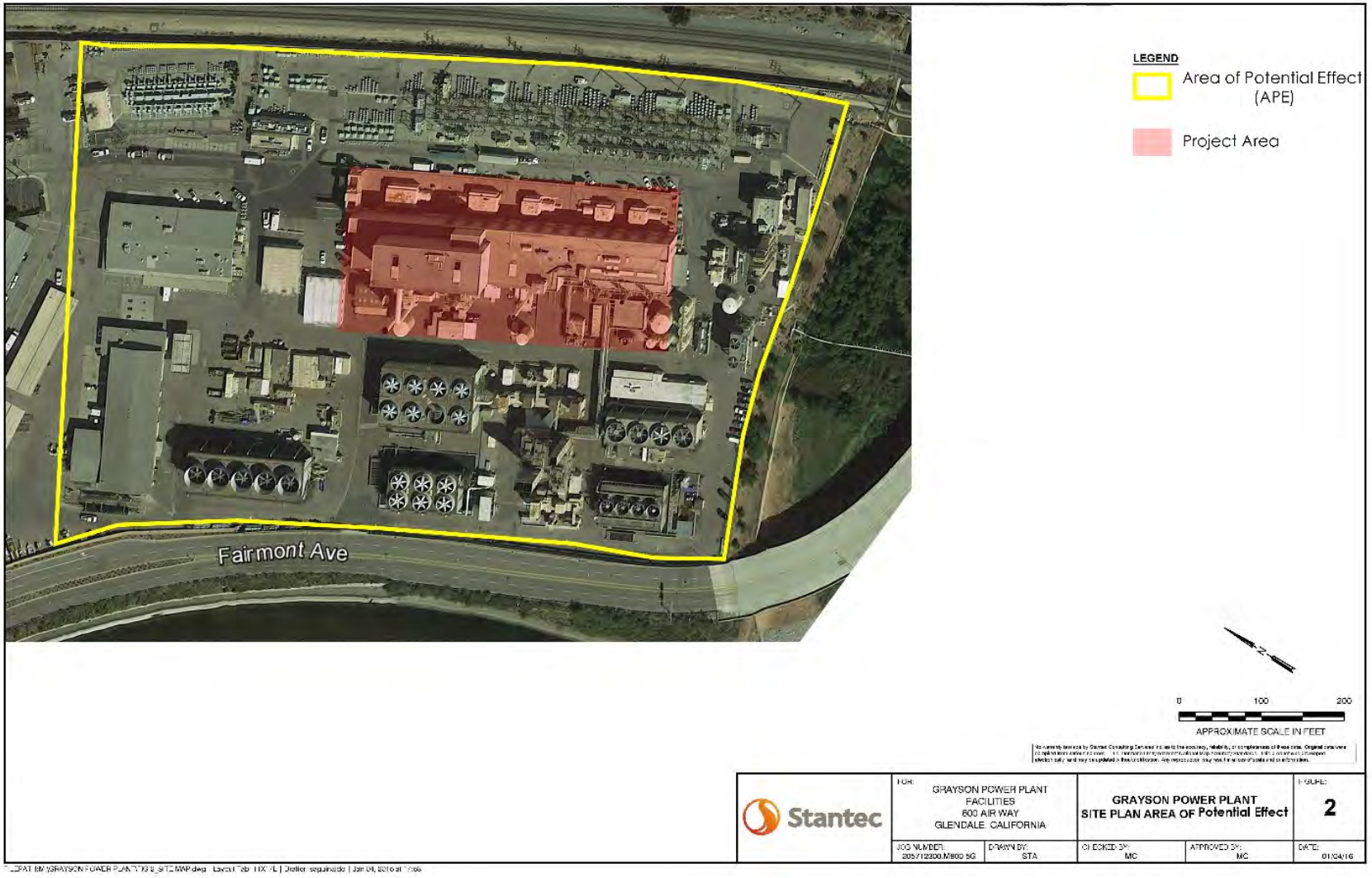


Figure 2 Grayson Power Plant Site Plan Area of Direct Impact

PHOTOGRAPHS OF PROJECT SITE

Figure 3 Grayson Power Plant Boiler Building, View Looking Southwest

Figure 4 Overview of Project Area from Roof of Grayson Boiler Building Looking Northwest

Figure 5 Overview of Project Area from Roof of Grayson Boiler Building Looking West

Figure 6 Overview of Project Area from Roof of Grayson Boiler Building Looking Southwest

Figure 7 Overview of Project Area from Roof of Grayson Boiler Building Looking Southwest

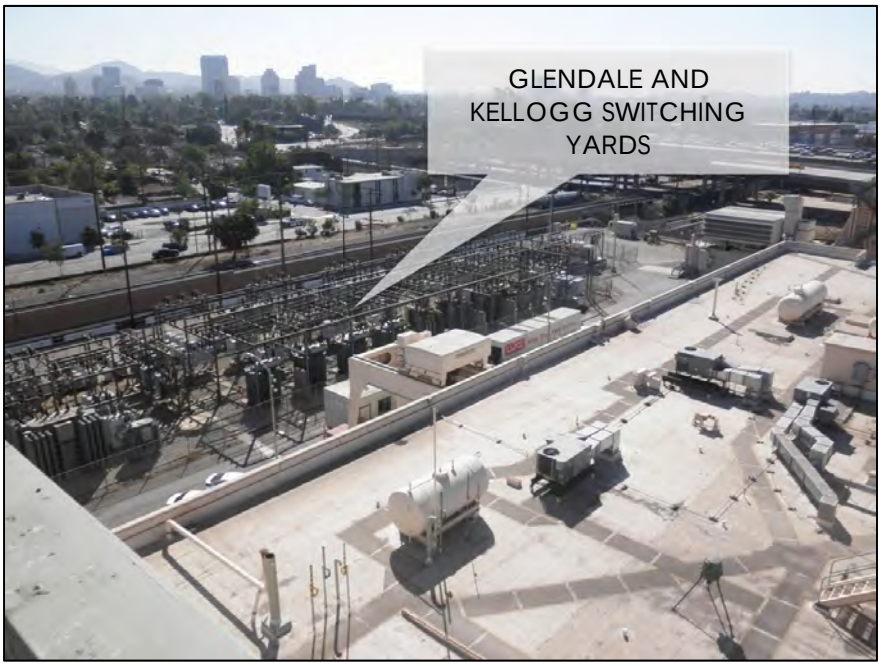


Figure 8 Overview of Project Area from Roof of Grayson Boiler Building Looking Southeast at switching yards

1.4 CULTURAL RESOURCES PROJECT STAFF QUALIFICATIONS

The GWP contracted with Stantec to undertake an architectural survey and evaluation of the Grayson Power Plant site. The cultural resources team has 20+ years of experience preparing Section 106 of the NHPA, **NEPA** ~~National Environmental Policy Act (NEPA)~~ and CEQA documentations. The evaluation was conducted by the following individuals:

- **Michelle Cross**, MA, **Anthropology with a Specialization in Historical Archaeology (College of William and Mary 2005),** Registered Professional Archaeologist (RPA), is the Cultural Resources Program Manager and U.S. Environmental Services Technical Discipline Lead for Assessment, Permitting, and Compliance for Stantec. She has more than 16 years of experience in cultural resources management and historic preservation. She manages in-house technical staff, supervises technical document preparation, and provides quality control and peer review for cultural resources studies. Her expertise includes archaeological identification, evaluation, and data recovery projects in compliance with local, state, and federal laws and regulations. Michelle served in the capacity of Cultural Resources Manager for the Owner's Engineer Repowering project.

- **Sandra DeChard**, MA **Preservation Studies with a Specialization in Architectural History (Boston University 2000),** is a Senior Architectural Historian and Subject Matter Expert for Architectural History with Stantec. She has 24 years of experience in cultural resources and related fields with extensive experience in Phase I level architectural surveys for transmission line corridors and associated substation and power plant documentation projects. Her experience also includes consultation with local, state, and national review agencies in association with state and federal compliance for cultural resources projects. Sandra is a contributing author to this report.

- **Corri Jimenez**, MS **Historic Preservation (University of Oregon 2000),** is a Senior Architectural Historian with Stantec with over 15 years of experience in architectural history and historic preservation. She has experience working across the United States in the West, Great Basin, and Mid-Atlantic. She also has experience in writing federal Section 106 and CEQA Cultural Resource compliant reports on built environment resources in the state of California. Corri is also a contributing author to this report.

- **Garret Root, MA Public History (California State University, Sacramento 2011), is a Senior Architectural Historian at Stantec with over eight years' experience in architectural history. He has extensive experience in California with specialization in electrical history having worked on over 40 utility specific projects including power plants, electrical and gas transmission, hydroelectric, and nuclear. Garret is a contributing author and editor on this report.**

- **John Terry**, BA **Architecture (Cal Poly 1980),** is a Historical Architect for Stantec with over 35 years of diverse experience in architecture. He also has 26 years of experience as a professor of architectural history at Cosumnes River College. John is a licensed architect

and his professional experiences include consulting and inventory/survey of the built environment. John has also conducted historical research in various repositories including museums and library archives, and has consulted with preservation staff at the municipal level. John conducted the architectural fieldwork for the project as well as the archival research.

- **Meagan Kersten**, MA **Anthropology (California State University, Sacramento 2013),** is a Cultural Resource Specialist with Stantec with over 6 years of archaeological experience, conducting such tasks as completing archaeological surveys, performing cultural resource records searches at the California Historical Research Information Centers (CHRIS), and Native American correspondence. She also has experience in writing federal Section 106 and CEQA Cultural Resource compliant reports. She assists with and manages CEQA projects as well as projects involving federal permitting and funding on a wide array of large- and small-scale infrastructure projects (alternative energy, oil, water, wastewater, linear transportation, and pipeline). Meagan conducted the architectural fieldwork for the project as well as the archival research.

The Stantec Cultural Resources Program Manager and Senior Architectural Historians directing the survey meet the Professional Qualification Standards of the Department of the Interior (48 FR 44738-9). The architectural fieldwork of these investigations conforms to the qualifications specified in the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (Federal Register 48:44716-44742, September 29, 1983), and to the CEQA Statute and Guidelines.

2.0 METHODS

2.1 RESEARCH METHODS

As part of the research methodology for this study, Stantec staff, Meagan Kersten and John Terry, undertook intensive research at a number of area repositories including the City of Glendale's Central Library, Special Collection Room 2. This research yielded historic background information in the form of newspaper clippings and historic narratives pertaining to the construction of the Grayson Power Plant (Plant) facility and the early development of utilities in Glendale. Research was also conducted by Meagan Kersten and John Terry at the GWP on August 17, 2015. Senior Mechanical Engineer Camilo A. Ruiz Sr. with GWP provided information on the boiler building's construction and timeline of installation of equipment, later turbines, and cooling towers. The GWP provided photographic copies of the original black and white architect renderings of the building.

Stantec Architectural Historian, Corri Jimenez, undertook a desktop review of the buildings located in the Grayson Power Plant (Plant) project area. As part of the desktop analysis Stantec staff reviewed historic topographic maps and aerial imagery and consulted appropriate historical background literature which included review of Environmental Data Resources, Inc. (EDR)'s Environmental Site Assessment (ESA) on the Plant (October 13, 2015). Building permits filed by the Plant and on file at the City of Glendale were also accessed and reviewed. Stantec combined the aerial mapping with the information provided in the building, electrical, mechanical, plumbing/gas and heating/ventilating/cooling/refrigeration permits to inform the assessment of temporal changes at the Plant.

2.1.1 CORRESPONDENCE

In addition to archival repositories, Stantec also contacted the Glendale Historical Society via telephone twice from August 11 through 14, 2015 and Stantec left messages identifying the research for the Grayson Power Plant, planned dates for research in Glendale, and requests for input by phone or email. No response was received. Stantec sent a follow-up email to the Historical Society on December 30, 2015. A response was received from Greg Grammer, President of the Glendale Historical Society via email on December 30, 2015. Mr. Grammer said that he was unaware of any information on the Grayson Power Plant available at the historical society and those generally archival documents, historic photos, etc. are kept in the Special Collection Room at the Glendale Central Library (which Stantec reviewed, see above). On February 2, 2015, Mr. Grammer submitted an article to Stantec which noted that the Plant was the first earthquake retrofitted power plant in the world. This information was incorporated into the report and bibliography.

Email communication was also sent to Historic Preservation Planner, Jay Platt, at the Glendale Community Development Department on December 30, 2015. Mr. Platt responded via email on

January 4, 2016, stating the City of Glendale's ordinance in regard to the Glendale Historic Register is silent to the discussion of architectural integrity. Platt referenced, "most consultants conducting architectural evaluations apply the local register and an integrity analysis, similar to what is applied in both the National and California Registers submitted to the City, which serve as a rationale for not meeting one or more of the criteria for listing on the Glendale Historic Register" (email correspondence from Jay Platt to Michelle Cross of Stantec, January 4, 2016).

~~2.2 EVALUATION METHODS~~

~~Please note structures and buildings constructed after 1970 located in the project area are not considered "historic" for the purposes of this evaluation, because they were less than 45 years old. Construction at the Plant that is less than 45 years old is reflected in the evaluation as changes and modifications to the "historic" setting, character, and architectural design of the original Plant site.~~

2.2 BUILT-ENVIRONMENT FIELD METHODS

The fieldwork portion of the architectural survey for the Plant was conducted on August 17-18, 2015, by Stantec cultural resource staff, John Terry and Meagan Kersten under the direction of Michelle Cross, Cultural Resources Program Manager and Senior Architectural Historian, Sandra DeChard. Site documentation for this project included intensive level survey of the Plant. All built environment resources were documented during the course of the survey. The survey entailed documentation of the main boiler building as well as its associated five cooling towers, and Units 8A **and** 8B**C**, ~~and 8C,~~ directly southwest of the boiler building (see Figure 1).

Digital photographs were taken of the exteriors of all the buildings and structures as well as the boiler building's interior. Detailed notes documenting materials of construction, configuration/layout of the building, existing equipment dating prior to 1970, and changes to the building over time, among other pertinent features were also recorded. Senior Mechanical Engineer at the Plant, Camilo A. Ruiz Sr., provided additional, relevant historical, construction and operational information regarding the Plant. Mr. Ruiz, Sr. accompanied the surveyors during the documentation process.

3.0 BACKGROUND RESEARCH

3.1 PREVIOUSLY RECORDED RESOURCES

Stantec conducted a record search at the South Central Coastal Information Center (CCIC) of the California Historical Resources Information System (CHRIS) on August 17, 2015 (Records Search File No: 15366.1428). The search determined that 19 historic architectural resources had been previously identified within 0.5-miles of the Grayson Power Plant ADI.

None of the previously recorded architectural resources identified through the CCIC records search are listed on the National Register of Historic Places (NRHP), CRHR, and/or the City of Glendale Register of Historic Resources. No previously recorded architectural resources are located within the current Project area/ADI. A review of the Glendale Register of Historic Resources showed an additional four resources listed within this 0.5-miles ADI, which were not formally recorded or listed per the CHRIS records search. See Appendix B for a copy of the completed records search.

Table 1 Previously Recorded Architectural Resources within 0.5-Mile Radius of the Grayson Power Plant Project Area

Primary #	Resource	Date	Surveyed by	Survey Date
19-175297	Griffith Park, Riverside Drive	1896-1944	C. McAvoy	1994
19-186638	Beauty College, 5245 West San Fernando Road	1937	LSA Associates; K. Crawford	2000; 2012
19-188007	San Fernando Road	1880s to present	J. McKenna	2006
19-190312	Caltrans Bridge No. 53C0226	1939	J. Ostashay; C. Ehringer	2000; 2012
19-190599	General Aircraft Co., 5512-5514 San Fernando Road	1921, 1922, 1948	J. Ostashay	2000
19-190600	Commercial Building, 525 Commercial Street	1942	J. Ostashay	2000
19-190601	ICC C., 521 Commercial Street	1946	J. Ostashay	2000
19-190602	R.A. Fisher Co., 517 Commercial Street	1947, 1954	J. Ostashay	2000

Primary #	Resource	Date	Surveyed by	Survey Date
19-190603	Commercial/Milford Streets Industrial Historic District	1929-1951	J. Ostashay	2000
19-190604	Industrial Building, 801 Milford Street	1929	J. Ostashay	2000
19-190605	Industrial Building, 811 Milford Street	1946	J. Ostashay	2000
19-190606	Industrial Building, 815 Milford Street	1951	J. Ostashay	2000
19-190607	Industrial Building, 514-516 Commercial Street	1946	J. Ostashay	2000
19-190608	Industrial Building, 526 Commercial Street	1947	J. Ostashay	2000
19-190609	Single Family Residence, 862 Grange Street	1937	J. Ostashay	2000
19-190610	Single Family Residence, 866 Grange Street	1937	J. Ostashay	2000
19-190611	Single Family Residence, 870 Grange Street	1946	J. Ostashay	2000
19-190612	Multi-Family Residence, 874 Grange Street	1953	J. Ostashay	2000
19-190897	Los Angeles River Channel, Glendale Narrow Section	1935-1959	D. Slawson	2013

The Glendale Register of Historic Resources was also referenced and four resources were located within a 0.5-mile radius of the project ADI. None of these resources will be impacted by the project.

Table 2 Glendale Register of Historic Resources Listed Architectural Resources within 0.5-Mile Radius of the Grayson Power Plant Project Area

Name	Address	Date Designated	Date Built	In the ADI?
Grand Central Air Terminal	1310 Air Way	1977	1928	No
Taylor House	1027 Glenwood Road	1977	1873	No
Concord Street Bridge	Concord Street at Verdugo Flood Control	1997	1936	No
Kenilworth Avenue Bridge	Kenilworth Avenue at Verdugo Flood Control	1997	1937	No

3.2 PREVIOUSLY RECORDED REPORTS

There were 13 previously conducted reports and studies identified within 0.5-mile radius from the project area. One report was recorded in the project area, prepared by URS Corporation (Report #LA-06006) (Appendix B). Unit 9, located northeast from the core of the facility of the Plant was previously surveyed by URS Corporation in 2003 (Report #LA-06006), and a cultural resources technical report was completed (see Appendix B). Unit 9 is not within the current project area. URS (2003) did not conduct an architectural evaluation of Unit 9 as part of their cultural resources review and concluded that no known or potential archaeological resources were present in the project area.

Table 3 Reports and Studies within 0.5-Mile Radius of the Grayson Power Plant Project Area

Primary #	Report Name	Author(s)	Affiliation	Date
LA-00845	Prehistoric Cultural Resource Survey and Impact Assessment for a Portion of Griffith Park, Los Angeles, California	Beroza, Barbara	University of California, Los Angeles Archaeological Survey	1980
LA-02210	Archaeological Survey Report and Assessment of the Riverdale Parcel, Griffith Park Los Angeles, California	Frierman, Jay D.	-	1989
LA-02950	Consolidated Report: Cultural Resource Studies for the Proposed Pacific Pipeline Project	Anonymous	Peak & Associates, Inc.	1992
LA-03554	Ucas-304 Survey of Griffith Park, Los Angeles County	Leonard, Nelson N. III	UCAS, Department of Recreation and Parks City of Los Angeles	1968
LA-06006	Cultural Resources Technical Report City of Glendale Water & Power Grayson Unit 9 Project	URS Corporation	-	2003
LA-06738	Highway Project to Construct a New Maintenance Station Under the Ventura Freeway (134) in the City of Glendale, the Doran Street Station at 943 W. Doran Street	Sriro, Adam	Caltrans District 7	2001
LA-06739	Highway Project to Construct a Soundwall Along the Southern Side of Eastbound Route 134 from Concord Street to the Columbus Ave. Pedestrian Overcrossing Within the City of Glendale	Sylvia, Barbara	Caltrans District 7	2001
LA-07263	Cultural Resources Assessment for Cingular Wireless Facility Vy183-01 City of Glendale, California	Kyle, Carolyn E.	Kyle Consulting	2002
LA-07427	Caltrans Historic Bridge Inventory Update: Metal Truss, Movable, and Steel Arch Bridges	McMorris, Christopher	JRP Historical Consulting	2004

Primary #	Report Name	Author(s)	Affiliation	Date
LA-07840	Negative Archaeological Survey Report for the Beautification and Modernization Along Route 134 from the 134/170 Separation to Shoup Ave Uc, and Along Route 101 From the 101/170 Separation to Concord Street Uc	Sylvia, Barbara	Caltrans District 7	2001
LA-08254	Results of a Phase I Cultural Resources Investigation of the Proposed Los Angeles Department of Water and Power River Supply Conduit, Los Angeles County, California	McKenna, Jeanette A.	McKenna et al.	2004
LA-08255	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project State of California, Volumes I and II	Arrington, Cindy and Nancy Sikes	SWCA Environmental Consultants, Inc.	2006
LA-08303	Cultural Resources Record Search and Site Visit Results for Royal Street Communications, Llc Candidate LA0057b (Nextel sperry), 4640 Sperry Street, Los Angeles, Los Angeles County, California	Bonner, Wayne H.	Michael Brandman Associates	2007
LA-10642	Preliminary Historical/Archaeological Resources Study, Antelope Valley line Positive Train Control (PTC) Project Southern California Regional Rail Authority, Lancaster to Glendale, Los Angeles County, California	Tang, Bai "Tom"	CRM Tech	2010
LA-10767	Archaeological Monitoring for Cultural Resources-the Los Angeles Zoo Parking Lot Project, EW40023F, Phase 1, City of Angeles, Los Angeles County, California	Hogan, Michael	CRM Tech	2010
LA-12526	Santa Clarita Valley Sanitation District Chloride TMDL Facilities Plan Project, Phase I Cultural Resources Assessment	Ehringer, Candace, Ramirez, Katherine, and Vader Michael	ESA	2013

3.0 HISTORIC CONTEXT

3.1 ELECTRICITY IN CALIFORNIA

California's growth in the first half of the twentieth century was due in part to the development of ambitious hydroelectric systems. Long-distance transmission lines linked the power generating mountainous regions with valley farms, coastal centers, and distant cities, allowing a pace and scale of development that was previously unattainable. By the 1920s, this intricate system of hydroelectric facilities, coupled with a growing number of fuel-fired steam plants, fed into long distance transmission lines and a series of substations that transferred and distributed power to locations throughout the state for widespread public use (Root and Herbert 2013: 1; Department of Energy 2015).

In the 1880s, hydroelectric plants provided small-scale electrical development to only isolated companies, such as Standard Consolidated Mining Company in Bodie, CA (Hubbard 2006). However, by the early 1890s AC technological advancement allowed for a more effective means of transmitting electricity over ever-increasing distances. At the outset of this development, the San Antonio Light and Power Company constructed a 13 mile, 5,000-volt, transmission line in 1892, with PG&E constructing the Folsom Hydroelectric Plant's 22 mile, 11,000-volt transmission line in 1895 (Coleman 1952; 138-140). These distances soon gave way to ever larger transmission capability, with Pacific Light and Power Company's Big Creek Hydroelectric Project running at 150 kV by 1913. Several small companies began constructing independent and local power plants and transmission system (JRP 2004).

~~The development of electrical power was an important factor in California's growth, beginning predominantly in the late-nineteenth century with the evolution of the mining and agricultural industries that spurred development of cities and towns throughout the state. In the early years of electricity's development, two men, Thomas Edison and George Westinghouse, were at the forefront and offered two differing scientific perspectives, regarding the development of electrical power generating, known as Direct Current (DC) versus Alternating Current (AC). While Edison worked on perfecting DC electricity with shorter range electrical transmission, Westinghouse, worked on transmitting AC electricity on long distances via high voltage transmission lines. Edison's DC current aided by nearby hydroelectric sites revolutionized communities near water sources but was an issue when it came to bringing that power to more urban areas. Not all population centers were near running waters or reservoirs that could be utilized for hydroelectric power. As such, the development of California relied heavily on the transmission of AC electrical lines in generating power (California Energy Commission 2014).~~

~~One of the first companies in California to utilize AC electricity was San Antonio Light and Power formed in 1892 by partners Almerian Decker, Cyrus G. Baldwin, and Henry H. Sinclair. The company took advantage of Westinghouse's technology and ran electricity from the power plant to Pomona, 14 miles away. Other larger power generation plants soon followed including~~

~~Mill Creek, also designed by Decker, the Folsom Power Plant, designed by James Lightipe, and the Bay Counties Power Company, among others (California Energy Commission 2015).~~

~~During the post-World War II boom in California as residential and industrial development increased, power companies focused on hydroelectric and steam power electrical generation.~~ **Post-World War II California residential and industrial development increased and, power companies responded with hydroelectric and steam power electrical generation.** Steam power generation, however, proved to be more cost effective and municipalities and other companies began to build power generation plants close to population centers utilizing steam turbines to generate power to meet the increased demands for electricity (California Energy Commission 2014, 2015).

3.2 CALIFORNIA STEAM AND ELECTRICITY IN LOS ANGELES COUNTY

As the City of Los Angeles and Los Angeles County experienced rapid growth during the early decades of the twentieth century, the demands for electricity increased dramatically. Prior to 1916, privately owned companies including Southern California Edison and Pacific Power & Light among others generated most of the electrical power in Los Angeles. **British designer Sir Charles Parsons built the first steam turbine-generator in 1884. At the beginning of the twentieth century, engineers designed steam turbines to replace the aging steam engine power plants. Aegidius Elling of Norway is credited in 1903-1904 as being the first to apply the method of injecting steam into the combustion chambers of a gas turbine engine (Termuehlen 2001: 11, 21-28; Beck and Wilson 1996: 30)). The greater Los Angeles region had multiple examples of early fuel fired steam plants including the Banning Street Electrical Plant in Los Angles completed in 1883, Los Angeles Steam Plant No. 1 constructed in 1896, Pacific Light and Power Company's steam plant in Redondo Beach was completed in 1902 and the Glenarm Power Plant constructed in Pasadena in 1906 (Water and Power Associates 2017; City of Pasadena 2015). Within a relatively short time, the technology and capacity of these engines to supply power and electricity grew exponentially. These advances brought electricity to a wide range of industrial and domestic applications; however, the materials needed to withstand the high temperatures of modern turbines were not yet available. Improvements in steam turbines advanced throughout the 1920s and 1930s, leading to a generation of more efficient turbine power plants in the 1950s. During this time, utilities closed or replaced many of the older steam-electric plant generators and constructed more modern units (Myers 1984: 8).**

Steam power generation was part of California's power production throughout the twentieth century, though it declined considerably in the period leading up to World War II as large hydroelectric generating plants came online throughout the state. As early as 1920, hydroelectric power accounted for 69% of all electrical power generated. In 1930, that figure had risen to 76%, and by 1940 hydroelectric sources provided 89% of California's electricity. After World War II this trend reversed, and construction of steam-powered electric generating units grew, accounting for most of the new construction. By 1950, hydroelectricity accounted for only 59% of the total power generated, falling to 27% in 1960. Some new hydroelectric plants

were built during the 1960s, chiefly associated with federal and state water projects, but by 1970, hydroelectric plants accounted for only 31% of all electricity generated in California. A combination of drought, discovery and tapping of natural gas, and lack of new hydroelectric sites led to its decline (Williams 1997: 374).

A persistent drought in California caused the major utilities to question the reliability of systems dependent on abundant water flows, like hydroelectricity. This drought began in 1924 and continued, on and off, for a decade. Concurrently, in the 1920s new natural gas discoveries were made and provided both Northern and Southern California with ample fuel for steam electric power generation. The confluence of these various factors – drought, new steam generator technologies, and new supplies of natural gas – prompted California utilities to begin constructing large steam plants. Steam plants built across the state shared design characteristics including locations close to load centers to reduce transmission costs, easy and efficient access to fuel supplies, near a water supply, on inexpensive land, and on geological formations that could provide a good foundation (Steele 1950: 17-21). By 1920, the cities of Burbank, Pasadena, Los Angeles, and Glendale restructured their original charters to allow municipality owned power generation facilities and distribution lines (Williams 1997:261; Water and Power Associates 2015; Electrical West 1929). In 1928, LA Gas and Electric Corporation constructed the Seal Bach Power Plant and PG&E constructed Station C in Oakland. In 1929, Great Western Power Company built a large steam plant on San Francisco Bay, near the Hunters Point shipyard, fitted with two 55 MW generators. In 1930, fuel-fired steam power plant accounted for more than half of all new plants under construction in California. The fuel-fired steam generation capacity jumped from 1924 at 407,000 kW to over 1 million kW a mere six years later. (Williams 1997: 279-280; City of Pasadena 2015; Burbank Water & Power 2015; Water and Power Associates 2017; Spencer 1961).

In 1916 the City of Los Angeles' Bureau of Power and Light provided the first municipal power distribution. The Bureau's first power generation plant, San Francisquito 1, was energized the following year (Water and Power Associates 2015). ~~Since its construction, two of its 9.4-megawatt units and a 25-megawatt unit were retired in 1981 and 1984, respectively (California Energy Commission 2014).~~ Originally some of Los Angeles' power was supplied by nearby Pasadena, but with the construction of San Francisquito 1, the City of Los Angeles was able to provide Pasadena with electrical power over 34 kV lines. By 1920, the Cities of Burbank, Pasadena, Glendale, and Los Angeles restructured their original charters in order to allow the cities to own power generation facilities and distribute electricity to their residents (Williams 1997:261; Water and Power Associates 2015). After this time, municipalities began to construct larger power generation facilities. The City of Pasadena added to the capacity of the existing steam plant by constructing the Santa Anita and Maryland power substations during the 1930s and the Glenham substation in the early 1950s. In 1941, the City of Burbank added the Magnolia Power Station, the same year as the City of Glendale's Grayson Power Plant (Williams 1997: 280; City of Pasadena 2015; and Burbank Water & Power 2015). **These factors prompted many municipalities, like Glendale to construct power plants of their own**. ~~Since the construction of the power generation facilities in Pasadena and Burbank, Glenham's 45-megawatt unit was~~

~~retired in 1983, and 25- and 35-megawatt units were retired in 1997. Similarly, a number of Magnolia's units were retired including two 10-megawatt units in 1982/1983 and 10-, 34-, and 25-megawatt units in 2002 (California Energy Commission 2014).~~

~~Of the power facilities listed by the California Energy Commission Energy Almanac (2014) database, 17 were put online prior to 1970 (i.e., 45 year or older) including Glendale's Grayson Power Plant, San Francisquito 2 (1920), San Fernando in Sylmar (1922), and Franklin in Beverly Hills (1921). Others were added to the power grid in the 1950s and 1960s. A majority of these plants, however, were constructed during the 1970s and 1980s to meet the ever-increasing demands for electricity. Additionally, many of power facilities constructed prior to 1970 received major upgrades and renovations to cope with the increasing demands for electricity and support the increase in power generation over time due to growing population in California, as well as urban sprawl. A number of the units at power plants constructed prior to 1970 have been retired as they reached the end of their useful lives and were replaced by newer more efficient power generators (California Energy Commission 2014).~~

3.3 ~~HISTORY OF THE CITY OF GLENDALE~~ EARLY GLENDALE HISTORY

~~3.3.1 EARLY HISTORY~~

~~The early history of Glendale dates to the Spanish era with the formation of Rancho San Rafael, also known as La Zanja, granted to Corporal Jose Maria Verdugo who served as a soldier with Gaspar de Portolá in the 1769 expedition. Spanish Governor Pedro Fages granted the land to Verdugo on October 20, 1784, which was reconfirmed as a land grant in January 21, 1798, and represented 36,403 acres, or eight square leagues (Cowan 1977:87). In 1831, Verdugo died and passed his land grant onto his son and daughter, Julio and Catalina Verdugo. In 1861, Verdugo's children divided the rancho into smaller sections (URS 2003:10). In 1871, Catalina Verdugo died and Rancho San Rafael was ultimately dissolved into 150-acre parcels by the time the U.S. government patented the land grant (GLO #423) to Verdugo's children and their heirs on January 28, 1882 (Perez 1996:95).~~

~~Settlers constructed a schoolhouse and community church in the small town. In 1884, the community called a meeting to name their settlement; they chose "Glen Dale." Ranchers Cameron Thom, Erskin Ross, Benjamin Patterson, Harry J. Crow, Ellis Byram, and George Phelon took interest in the development of the Town of Glendale in 1887, and formally platted it (City of Glendale 2012a; GPA 2007; and URS 2003:10).~~

~~3.3.2 DEVELOPMENT AND THE PACIFIC ELECTRIC RAILROAD~~

By the turn of the twentieth century, the town had already experienced rapid growth **resulting** ~~thanks~~, in part, to the promotional efforts of Edgar D. Goode and Dr. D. W. Hunt and their Glendale Improvement Society in 1902 (City of Glendale 2012a). The growth continued with the opening of the Pacific Electric Railroad in 1904, connecting Glendale to Los Angeles (City of Glendale 2012a). **Glendale incorporated as a city in 1906 which extended approximately 1,480**

acres and by 1910 the population was 2,742 residents (Glendale News Press 1953c; Los Angeles Almanac 2015). Power generation in the City of Glendale began in earnest early when the citizens voted in favor of a $60,000 bond to create the Glendale Public Service Division that purchased the Glendale Light & Power Company generating facility in 1909. By 1910, the system was already strained as power output was a mere 107,000 kilowatts. To supplement, the City purchased additional electricity from Pacific Power & Light, now part of the Southern California Edison Company (Glendale Public Service Commission 1951).

By 1920, Glendale began annexing neighboring communities boasting the city's population to over 13,000 residents (City of Glendale 2012b; Los Angeles Almanac 2015). From 1930 to 1952, Glendale added Whiting Woods and Verdugo Mountains to their city limits a total of 23.6 square miles; two major annexations included New York Avenue (in the La Crescenta area) and Upper Chevy Chase Canyon, and several smaller annexations, which enlarged the City to 29.2 square miles by 1952. By 1950 the population was over 95,700 residents and was considered at the time to be "The Fastest Growing City in America" (City of Glendale 2012b; Los Angeles Almanac 2015). However, by the late 1930s the Glendale Public Service Commission, Electric Division could not keep pace with the population increases (Glendale Public Service Commission 1951). Prior to 1937, Glendale purchased their power from Southern California Edison Company. This supply was supplemented with completion of the Hoover Dam however, continued growth indicated another plant would be necessary to supplement demand [Glendale News-Press 1953a; Glendale Public Services Department 1974).

~~The line went down Brand Boulevard and was constructed on a strip of land owned by Leslie C. Brand, a prominent and notable resident whose efforts continued to bolster the reputation of Glendale as a place of business and the arts (City of Glendale 2012a). Brand's rail line was so great that downtown Glendale shifted west to Brand Boulevard and Broadway from its original center at Glendale and Wilson Avenues to the east. This rail line also helped the community grow by making a direct connection to downtown Los Angeles, and reducing a travel time to less than 20 minutes with trains arriving hourly (GPA 2007). Glendale became a highly accessible community.~~

~~Glendale incorporated as a city in 1906 with a city limits at approximately 1,480 acres and by 1910 the population was 2,742 residents (Glendale News-Press 1953c; Los Angeles Almanac 2015). Power generation in the City of Glendale began in earnest early when the citizens voted in favor of a $60,000 bond to create the Glendale Public Service Division and purchase an electrical generating facility the Glendale Light & Power Company, owned by L. C. Brand for the city in 1909. Brand offered to sell his company to the city for the sum of $23,000 in July 1909, and at that time, had 195 customers (Glendale Public Service Commission 1951). As early as 1910 the power output of 107,000 kilowatts already strained the system and additional electricity was purchased from Pacific Power & Light, now part of the Southern California Edison Company (Glendale Public Service Commission 1951).~~

~~By 1920, Glendale was booming the annexation of neighboring communities extended the city limits to 7,000 acres and a population of over 13,536 residents (City of Glendale 2012b; Los~~

~~Angeles Almanac 2015). During this time, Glendale experienced a construction boom on the main streets of town; modern commercial buildings and entertainment lined Brand Boulevard and residential neighborhoods of Craftsman bungalows and Spanish Colonial Revival dwellings took over nearby orchards and vineyards.~~

~~3.3.3 "FASTEST GROWING CITY IN AMERICA"~~

~~Prior to 1937, Glendale purchased their power from Southern California Edison Company, which was the successor to Brand's Pacific Light & Power Company. Much of Los Angeles County and Glendale was powered by the Hoover Dam; however, studies showed it would be necessary for Glendale to build their own plant to supplement demand [Glendale News-Press 1953a; Glendale Public Services Department 1974). By the end of the 1930s, it became apparent that with the increased growth of the city, the power from the Hoover Dam would be inadequate to service Glendale's customers. With the construction of the Hoover Dam, the city also contracted with the federal government of the Bureau of Reclamation to purchase 18,000 kilowatts with an additional contract between the City of Los Angeles and Glendale to transfer the power from the dam to the city (Williams 1997:280). As a result, the city decided to construct their own electrical generation plant, which opened in 1941 (Glendale Public Service Commission 1951; Watts 1954; Perry and Parcher 1981:59-60; and Yamada 2008).~~

~~From 1930 to 1952, Glendale acuminated the 2,160-acre Whiting Woods and Verdugo Mountains, extending the city limits to 15,140 acres or 23.6 square miles. By 1952two major annexations included New York Avenue (in the La Crescenta area) and Upper Chevy Chase Canyon, and several smaller annexations, enlarged the city to 29.2 square miles. 1950 saw the population at over 95,700 residents, Glendale was considered at the time to be "the fastest growing city in America" (City of Glendale 2012b; Los Angeles Almanac 2015). According to the Glendale Public Service Commission, the constant population growth was causing a compounded problem. The Electric Division claimed they were only able to service approximately 100,000 residents at a favorable rate (Glendale Public Service Commission 1951).~~

~~Between 1960 and 1970 the population of Glendale grew from over 119,440 residents to 132,660. Growth slowed during the 1970s; however, with the surge in residential development in the late 1970s and early 1980s, the population soared to 180,000. By 2015 the population of Glendale is estimated to be approximately 207,000 residents.~~

3.4 ~~GRAYSON POWER PLANT HISTORY~~ GLENDALE STEAM ELECTRIC GENERATING PLANT

~~The Los Angeles Times recorded in June 1940 the Glendale power plant would be, at the cost of $1.8 million, the world's first earthquake-proof plant. The article records the unique features of the plant as a "huge turbo-generator on an uncovered open deck" with a "special metal cover" to protect the generator from "rain and dust" (Los Angeles Times 1940). The article records the building as a "shell built of light steel and stucco filler walls, which will hide the more or less unsightly appearance of boilers" and had a "22-foot-deep basement" for its equipment (Los Angeles Times 1940).~~

~~Architect Daniel A. Elliott designed the original 1941 boiler building, referred as the "Glendale Power & Light" or "Steam Electric Generating Plant" in early rendering drawings (see Figures 9-13). The boiler building was architecturally designed in the Streamline Moderne-style and contained a generator in the same style, manufactured by the Combustion Engineering Company Inc., New York, as well as two boilers (Boilers 1A and 1B). Elliott is well known in designing the Burbank Water & Power administrative building in 1949, which is one of his best works (LA Conservancy 2015). The plant was renamed the "L.W. Grayson Steam Electric Generating Station" on October 10, 1972 after its General Manager and Chief Engineer, Lauren W. (L.W.) Grayson (City of Glendale 1972).~~

Building off the success of the 1920s and early-1930s and seeing the impending probability of an outbreak of hostilities, utilities and municipalities began constructing a series of fuel-fired steam plants across California. Northern California PG&E began construction of three, fuel-fired steam - plants located adjacent to oil refineries, in 1939. Southern California municipalities, in Burbank, Glendale (study property), and San Diego each completed power plants, in 1941 (Williams 1997: 279-280). The City of Glendale began planning for construction of a new power plant in 1937. However, the City's plans were met with immediate opposition by Los Angeles Bureau of Power and Light and the Southern California Edison Company, both which supplied the City with electricity and stated they had surplus electricity for sale (Los Angeles Times 1938). Despite these assertions, the City, led by industrial entities pushed forward with their plan for construction of a $1.8 million-dollar plant. The City secured the services of Architect Daniel A. Elliott to design the power plant, referred as the "Glendale Power & Light" or "Steam Electric Generating Plant" (Figure 9-13) (LA Conservancy 2015).

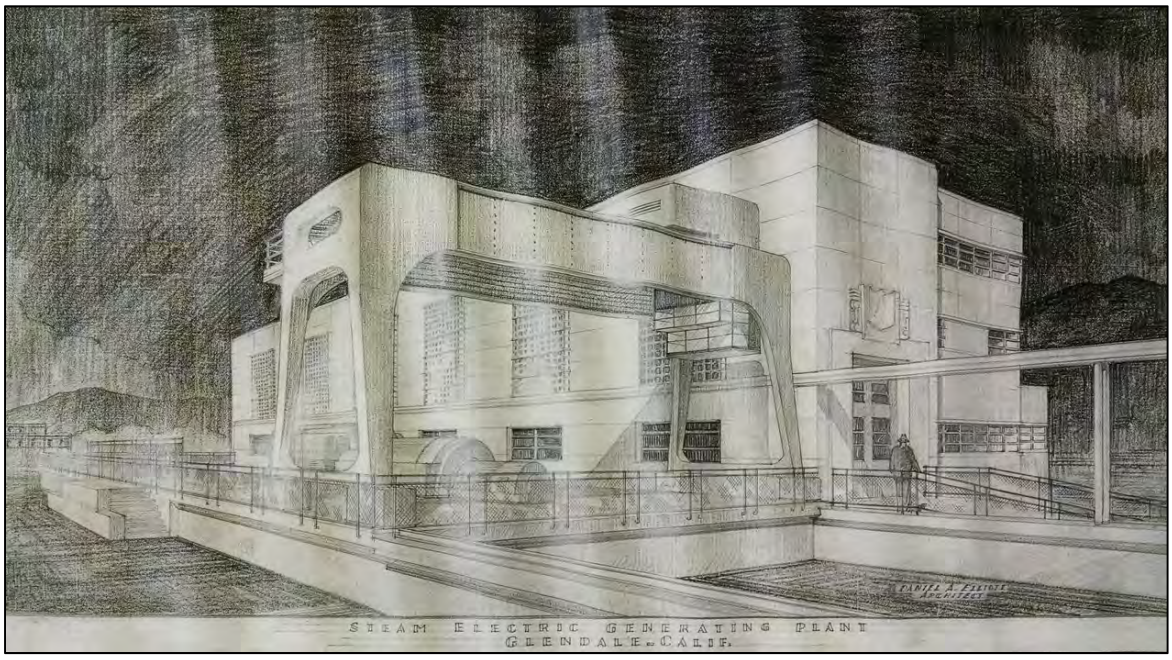


Figure 9 Architectural Drawings of the Original Design for Glendale's Steam Power Plant Drawn by Daniel A. Elliott (Collection of City of Glendale Water & Power)

Figure 10 Architectural Drawings of Alternate Designs for Glendale's Steam Power Plant Drawn by Daniel A. Elliott (Collection of City of Glendale Water & Power)

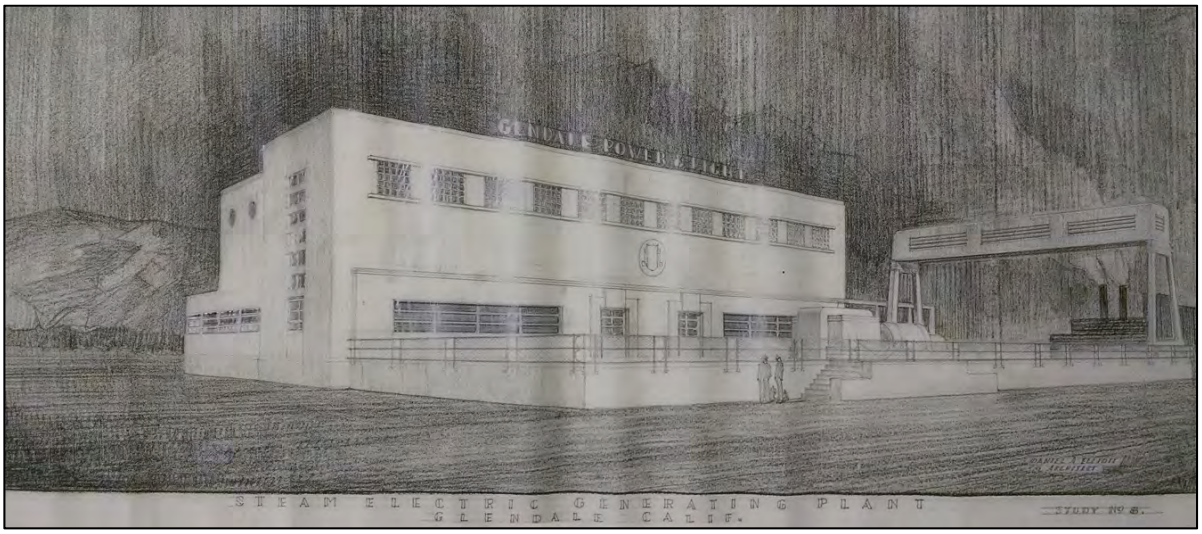


Figure 11 Architectural Drawings of Alternate Designs for Glendale's Steam Power Plant Drawn by Daniel Elliott (Collection of City of Glendale Water & Power)

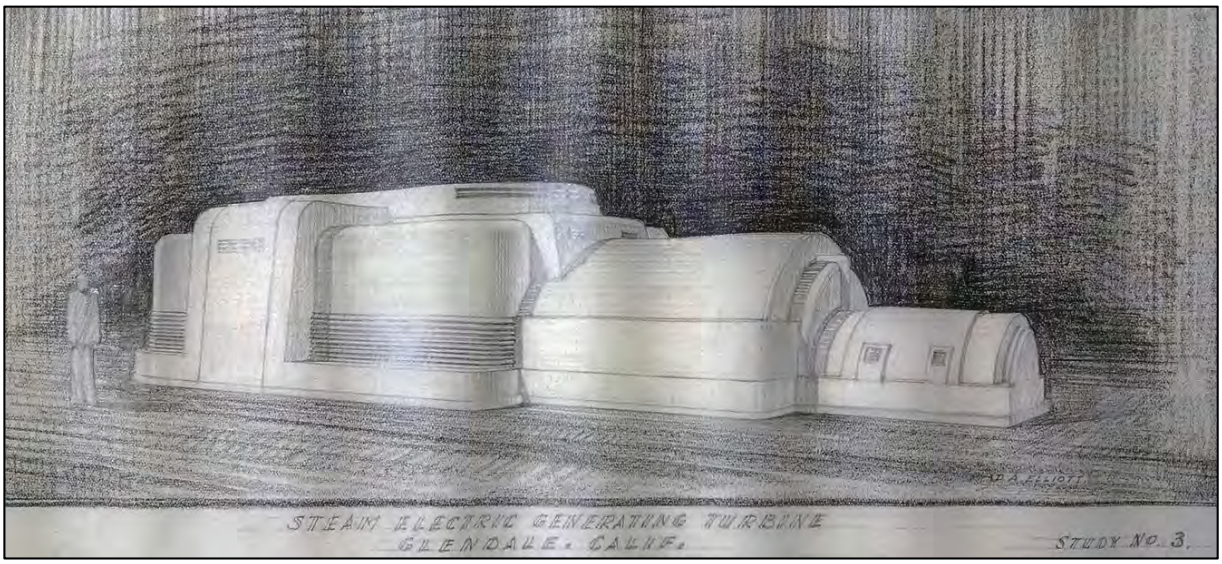


Figure 12 Architectural Drawings of the Original Design Turbine Covers for Glendale's Steam Power Plant Drawn by Daniel Elliott (Collection of City of Glendale Water & Power)

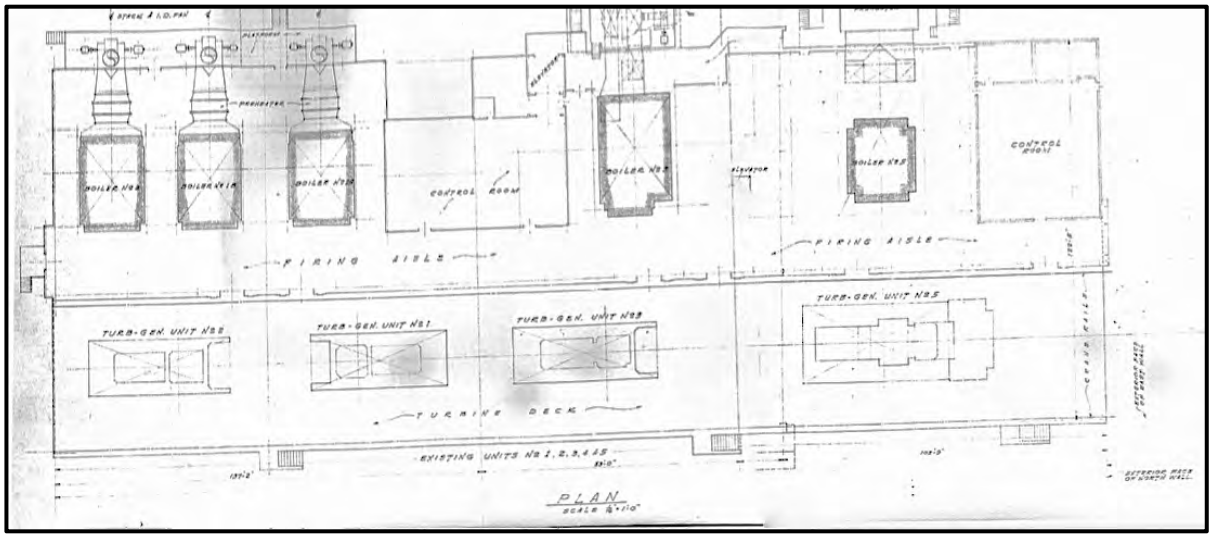


Figure 13 Architectural Floor Plan at the time of Unit 4 construction. Glendale's Steam Power Plant Drawn by Daniel Elliott (Collection of City of Glendale Water & Power)

Elliott designed the boiler structure in the Streamline Moderne-style, built to house two boilers (Boilers 1A and 1B). Located outside on a full length concrete pedestal were the generators, manufactured by Combustion Engineering Company Inc., New York and with Streamline Moderne detailing. Elliott was born in Las Vegas, New Mexico in 1898. He attended University of California at Berkley, earning an architecture degree in 1925. From 1925 through 1932 he served as a designer at the Los Angeles architecture firm of Gilbert Stanley Underwood before getting his architecture license and becoming an architect at the Metropolitan Water District of Southern California. He remained at the water district from 1932 through 1939. During World War II he worked at Hoover and Montgomery, a firm that specialized in water-related construction projects. Following the end of the war he formed his own architecture practice, one he maintained until his retirement in 1962. Principle examples of his work are water focused designs most notably the Colorado River Aqueduct Pumping Plants and F.E. Weymouth Memorial Water Softening and Filtration Plant completed in 1939, and the Burbank Water & Power administrative building in 1949 (LA Conservancy 2015; AIA 1956: 155).

Elliott's original design laid claim to being the world's first earthquake-proof plant, with a 22-foot-deep concrete basement, turbo-generator on an uncovered open deck with a metal covering over the generator from to protect from inclement weather, and a building shell built of light steel and stucco filler walls (Los Angeles Times 1940). At its start-up in 1941, the plant was capable of producing 20,000 kilowatts of power. **The City had already secured funding for a second unit set ot be added in 1945 (Los Angeles Time 1941;** Glendale Public Service Commission 1951). To meet increasing demands for electricity, a second unit was added in 1947, which included an additional 20,000-kilowatt generator and single boiler increasing the plant's combined kilowatt

capacity of 40,000 kilowatts (Glendale News Press 1953e; Glendale News Press 1953f; and Glendale Public Service Commission 1951).

As demand continued to increase, plans for a third unit were added in 1953 that included an addition to the boiler building on its north end; the third unit at the plant was completed at a cost of over $3 million (see Figure 9, Figure 12). ~~Unit 3, constructed to the north of the original building, included a new 20,000 kilowatt steam turbo generator, which provided an additional 20,000 kilowatts of power to meet the ever increasing demands for electricity in the Glendale area (Glendale News-Press 1953d).~~ The integral furnace boiler and superheater steam boiler unit installed during the construction of the third unit was manufactured by the Babcock & Wilcox Company and the turbine generator by General Electric. The company of Foster & Wheeler constructed the cooling tower and provided the condenser for Unit 3. The structural steel used in the construction of this portion of the building was fabricated by the Kyle Steel Construction Company. Unit 3 also utilized advances in engineering and technology, which allowed for greater steam pressure than Units 1 and 2, which in turn allows for greater operating efficiency. The turbines for Unit 3 are located outside the main building under a removable housing (Glendale News Press 1953e).

Figure 14 Grayson Power Plant c. 1950 (Collection of the City of Glendale Water and Power)

Between 1953-54, the plant generated a total of 122,649,440 kilowatts per hour which was supplemented by electricity generated at Hoover Dam, supplied all the power needed for the City (Glendale Public Service Commission 1951). Five more units were constructed after 1953 and included Unit 4 (1959), Unit 5 (1964), Unit 6 (1972), and Unit 7 (1974). The boiler for Unit 4 was manufactured by Riley Stoker Corporation; Unit 6 was manufactured by General Electric; and Unit 7 by the Curtiss-Wright Company. Units 1 through 3 maintain Elliott's the style aesthetics, however the structure's shape and detailing shifts with the addition of Units 4 and 5, to a significantly taller, less detailed utilitarian structure located north of the original 1941 boiler structure. As the building was expanded north, lower level fenestration of the first three phases was repeated but without the vertical glass block panels. Little significant architectural detail was included in Unit 4 & Unit 5's building expansion. In 1972, The plant was renamed the "L.W. Grayson Steam-Electric Generating Station" after the City of Glendale General Manager and Chief Engineer, Lauren W. (L.W.) Grayson who at the time was the longest serving employee. Grayson accepted a position at the City of Glendale in 1951 (City of Glendale 1972; Glendale News-Press 1972). His most notable achievement was in bringing power to Southern California through the Pacific Northwest Intertie (Glendale News-Press 1972).

~~Between 1953-54, the plant generated a total of 122,649,440 kilowatts per hour in addition to the power it received from Hoover Dam which it then supplied to the city (Glendale Public Service Commission 1951). The electricity serviced the street lighting and the underground system on Royal and Brand Boulevards by supporting underground facilities in the business and residential districts. L.W. Grayson created a 7-year light program in improving utilitarian lighting in the city as well as upgrades to the 1909 Pacific Electric Railroad that ran into Los Angeles (Glendale News Press 1953b)~~

~~Five more units were constructed after 1953 and included Unit 4 (1959), Unit 5 (1964), Unit 6 (1972), and Unit 7 (1974). The boiler for Unit 4 was manufactured by Riley Stoker Corporation; Unit 6 was manufactured by General Electric; and Unit 7 by the Curtiss Wright Company. The architectural character of the original phases (Units 1-3) are consistent with the original design intent of Architect Daniel A. Elliott from 1941. The addition of Units 4 & Unit 5 saw a change away from the earlier Streamline Moderne design, to a significantly taller, less detailed utilitarian structure that we see to the north (Figure 3, taller section center & right of photograph). As the building was expanded north the lower level of the first three phases was repeated but without the vertical glass block panels. Little significant architectural detail was included in Unit 4 and Unit 5's building expansion. In total it looks as though four additions were made to the original Unit 1 building of 1941.~~

Unit 8 (Unit 8A **and**, 8B~~, and 8C~~) was constructed in 1977 and was one of the last to be installed at the power plant and the most efficient of the ~~group~~ **units** while producing fewer emissions than the earlier generators at the plant (Cook 1977). **Initially, it was called a "combined cycle repowering unit" in producing more energy and fewer emissions with conventional units that provide better combustion controls and higher efficiency (Cook 1977).** The new system cost $20 million dollars and at the time, lessened air pollution (Ralph 1977).

~~Further environmental improvements to the plant resulted from the construction of a phosphate removal and treatment plant in 1978. The treatment plant was connected to the steam plant by a pipeline, which directly pumps the reclaimed water into the Grayson Power Plant's cooling towers (Rees 1978). In addition, since 1994 the plant has utilized methane gas from the Scholl Canyon Landfill mixed with natural gas to generate power in Units 3, 4, and 5 (Scholl Canyon Landfill 2015).~~

Continuous improvements in efficiency and power generation capacity have been one of the priorities at the Grayson Power Plant throughout its history including the construction of a new 50 megawatt power generator was completed in 2004, at a cost of $33.5 million dollars, replaced two of the older, outdated units. The new structure consists of a generator, a gas turbine and compressor, and an emissions control tower to filter out pollutants throughout the system. The generator runs entirely on computers and operates during peak hours (Moskowitz 2004).

In July 2010, a fire at Cooling Tower 3 caused severe damage to the structure (Wells 2010). The fire rendered the structure beyond repair and the structure was replaced (City of Glendale 2010). Repairs to other portions of the plant included the replacement of the superheater tubes in Boiler

No. 4 in 2001, among other updates (City of Glendale 2011). According to the City of Glendale, California Report to the City Council in April 2014, the boilers for Units 1 and 2 have been mothballed (City of Glendale 2014).

~~In July 2010, Cooling Tower 3 caught fire which caused severe damage to the structure, although no effect to service and no damage to any of the other cooling towers or structures on the site occurred (Wells 2010). Reports indicated that a spark or heat from the electrical lines ignited the wooden roof deck. The fire rendered the structure beyond repair and the structure was replaced (City of Glendale 2010). Repairs to other portions of the plant included the replacement of the superheater tubes in Boiler No. 4 in 2001, wall tubes in Boiler No. 4 in 2011, an upgrade of the burner management and boiler control systems, also in Unit 4 in 2011, among other updates (City of Glendale 2011). According to the City of Glendale, California Report to the City Council in April 2014, the boilers for Units 1 and 2 have been mothballed (City of Glendale 2014).~~

In 2015, the Glendale City Council commissioned plans for upgrading the Grayson Power Plant facility to make the plant more efficient, reliable and cost effective. According to the June article in the Glendale News-Press, seven of the eight turbines would be decommissioned and replaced by 4 more efficient turbines, which would be able to produce power more quickly (Mikailian 2015). Currently the power plant generates approximately 18% of the power needed for the City of Glendale with the remaining power coming from a combination of both local and remote generation (owned and leased), coupled with spot market purchases from a variety of suppliers throughout the Western United States (Mikailian 2015). **For a full history, please refer to the DPR-523 in Appendix A.**

~~3.5 LAUREN W. (L.W.) GRAYSON~~

~~Lauren W. (L.W.) Grayson was born in Boone, Iowa, in 1907, he moved with his family to Riverside, California in 1919 (Glendale News-Press 1972). In 1925, he began to work for the Utilities Department of the City of Riverside (Perry and Parcher 1981:59). In 1942, he was appointed superintendent of public utilities in Riverside, and in 1950, was appointed general manager and chief engineer. In 1951, he accepted a position in the City of Glendale, instructed to bring power to Southern California and Glendale (Glendale News-Press 1972). Grayson never received an engineering degree; however he was accepted as an expert in the field and a member of the American Society of Civil Engineers (ASCE) and was president of the California Municipal Utilities Association and American Water Works Association (Perry and Parcher 1981:59). Besides all these endeavors, he was instrumental in bringing power to Southern California through the Pacific Northwest Intertie (Glendale News-Press 1972).~~

~~In addition to his public service, he was a member of the Grandview Presbyterian Church, Kiwanis Club of Glendale, and Glendale Chamber of Commerce (Glendale News-Press 1972). He also served as a board director for the Glendale YMCA and was active in the Red Cross, Glendale AID and Community Chest (Glendale News-Press 1972).~~

~~Grayson received a George Warren Fuller Award in 1958 for outstanding achievement in the field of waterworks and a life membership in the American Water Works Association, which was the highest honor in the association (Perry and Parcher 1981:59). He retired in July 1970 (Perry and Parcher 1981:59)~~

~~Grayson died in Oak Harbor, Washington, at the age of 65 on May 22, 1972, and at the time was City of Glendale's top public service employee, working in the city for 19 years (Perry and Parcher 1981:59; Glendale News-Press 1972).~~

4.0 SITE ANALYSIS DESCRIPTION

4.1 HISTORIC AERIALS ANALYSIS

The following discussion highlights changes over time at the Plant through the review of aerial imagery from 1952 to 2012. Please refer to **Figures** ~~Figure~~ 15a-c to reference the analysis and highlighted changes discussed below.

The earliest aerial photograph found of the Plant site dates to 1952 (Figure 15, Aerial 1). The site in 1952 represented the original 1941 boiler building, which shows an addition to the northeast. The Glendale Switching Yard is located to the northeast of the boiler building and Cooling Tower #1 and Cooling Tower #2 are located southwest from the boiler building. Cooling Towers #1 and #2 are rectangular buildings, each with two parallel rows of six cooling flues. Between the boiler building and Cooling Tower #1 are numerous auxiliary structures of unknown function. On the site contains other long rectangular buildings, which may have been associated with the railroad. No other structures were located on the site besides these four resources.

The Plant site expanded between 1952 and 1964 (Figure 15, Aerial 2). According to Aerial 2, the boiler building's addition was finalized, and Unit #5 was completed on its northwest end. The Glendale Switching Yard was expanded, and the Kellogg Switching Yard was constructed next to a large, oval-shaped parking lot. Numerous new structures were constructed by the 1964 to the northwest, including Cooling Tower #3, Cooling Tower #4, and Cooling Tower #5, which have a diversity of cooling flues: Cooling Tower #3 has six flues in two bays, Cooling **Tower** #4 has eight flues in two bays, and Cooling Tower #5 has a row of five flues. In addition to these three cooling towers, a rectangular-shed building, a rectangular garage with two add-ons, and an L-shaped warehouse are located north of the towers as gabled buildings. No changes are evident in Cooling Tower #1 and Cooling Tower #2; however, there are numerous round-shaped structures located on the boiler building's northwest corner.

The Plant site between 1964 and 1977 changed significantly (Figure 15, Aerial 3). Cooling tower #1 was demolished and replaced; the cooling building changed from a rectangular building with two parallel rows of six flues to four flues with a utility structure addition to the northwest. A chemical storage tank was added between the cooling buildings, and a second chemical storage was added to the boiler building's west elevation. Unit #6 was constructed adjacent to the chemical storage at its northwest corner. In addition, Units #8A, #8B~~, and #8C~~ were constructed by 1977 in the middle of the site, between Cooling Towers #1, #2, #3, and #4. A 120-feet diameter fuel tank was constructed near the southwest corner of the boiler building. The Kellogg Switching Yard was expanded to the northwest with the removal of half of the oval-shaped parking lot. In addition, three parking sheds are constructed between three existing buildings at the northwest end of the site. No visual changes are apparent on Cooling Tower #2, Cooling Tower #3, Cooling Tower #4, and Cooling Tower #5, as well as the shed building, garage, and warehouse.

The Plant site between 1977 and 1979 had little changes (Figure 15, Aerial 4). Two pump houses were constructed east of Cooling Tower #5 and a small addition was added on to the boiler building's west elevation and oval tanks and auxiliary structures were added to its corner. No other changes are visual on the 1979 aerial photograph.

The Plant site between 1979 and 1981 had one significant change completed, which was the demolition and replacement of Cooling Tower #2 (Figure 15, Aerial 5). Historically in the 1952 through 1979 aerials, Cooling Tower #2 represented a rectangular building with six cooling flues, which was rebuilt as a four flue cooling tower.

The Plant site between 1981 and 1989 was little changed (Figure 15, Aerial 6). A new switching yard or station is added north of the warehouse. The Plant site between 1989 and 1994 had no changes (Figure 15, Aerial 7). The Plant site between 1994 and 2002 had one change to the site, which was the removal of the 1972 120' diameter fuel tank, the future Unit #9 site (Figure 15, Aerial 8).

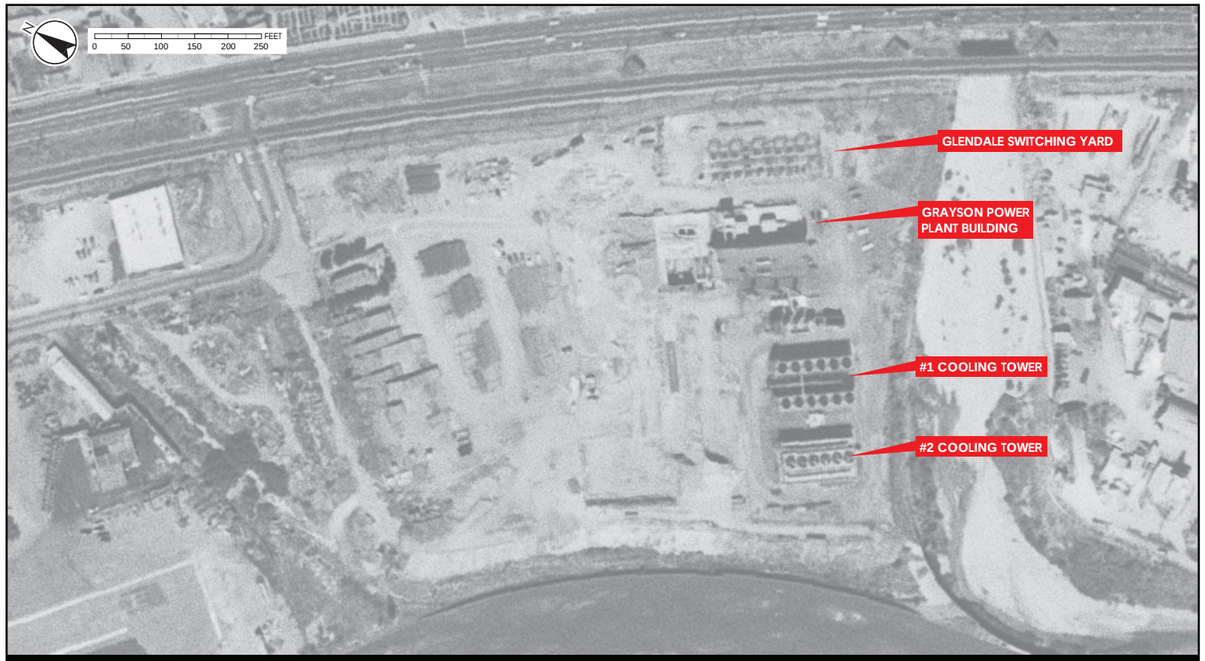
The Plant site between 2002 and 2005 evolved with additional changes (Figure 15, Aerial 9). Unit #9 was constructed on the 1972 fuel tank site, which was physically finished in 2003 (URS Corporation 2003). In addition, the Kellogg Switching Yard appears to have continued to expand again to the north, replacing a parking lot. A building to the north of this switching yard was demolished, and a new building was constructed. Unit #6 was demolished, and a utilities building was constructed.

The Plant site between 2005 and 2009 underwent a few changes that included the demolition of the building which was newly constructed between 2002-2005, and was replaced by a parking lot (Figure 15, Aerial 10). A second building was demolished near the boiler building's west elevation. The most significant change in these years is the construction of the Fairmont Avenue—the on-ramp visibly started off the south corner of the plant's site. Off Fairmont Avenue, the front entrance to the plant site was added off this avenue, fronting the riverside of the property.

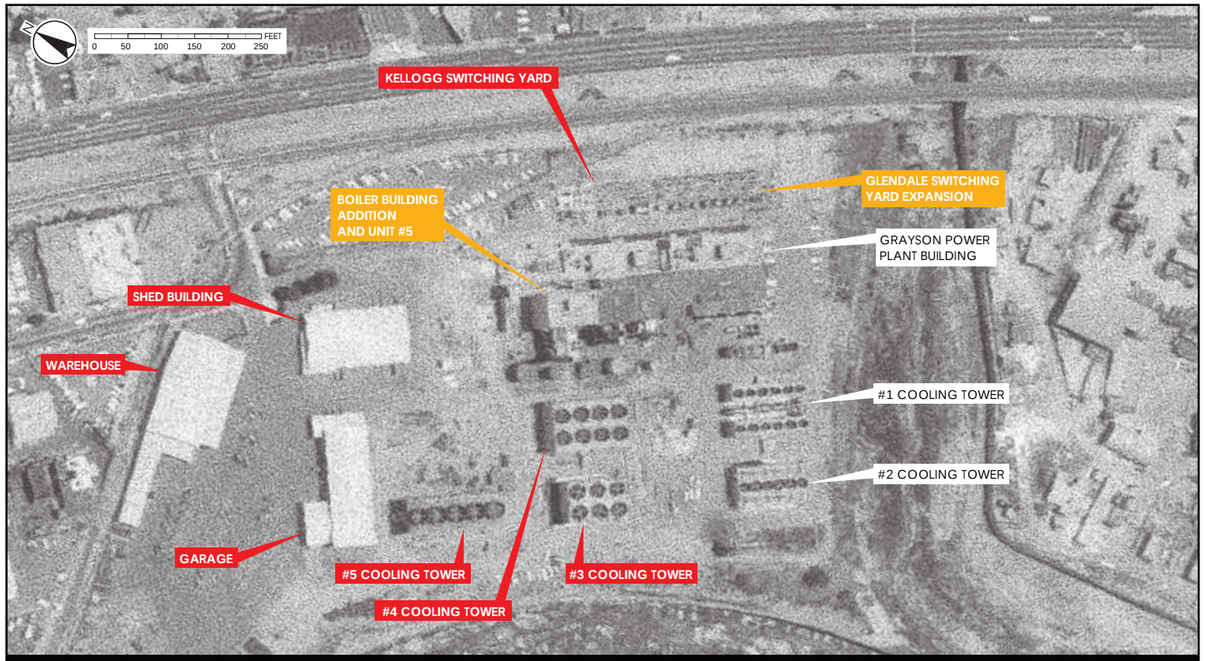
The Plant site between 2009 and 2011 was little changed, the most significant change was the relocation of the main entrance from Air Way has been to Fairmont Avenue (Figure 15, Aerial 11). With the entrance changed, a parking lot was constructed, and an on-site parking shed was removed. Near the boiler, utility type buildings were constructed on its west corner.

The Plant site between 2011 and 2012 included a new structure northwest of the boiler building, on the site of Unit #6 as well as the construction of a training center on an existing parking lot (Figure 15, Aerial 12).

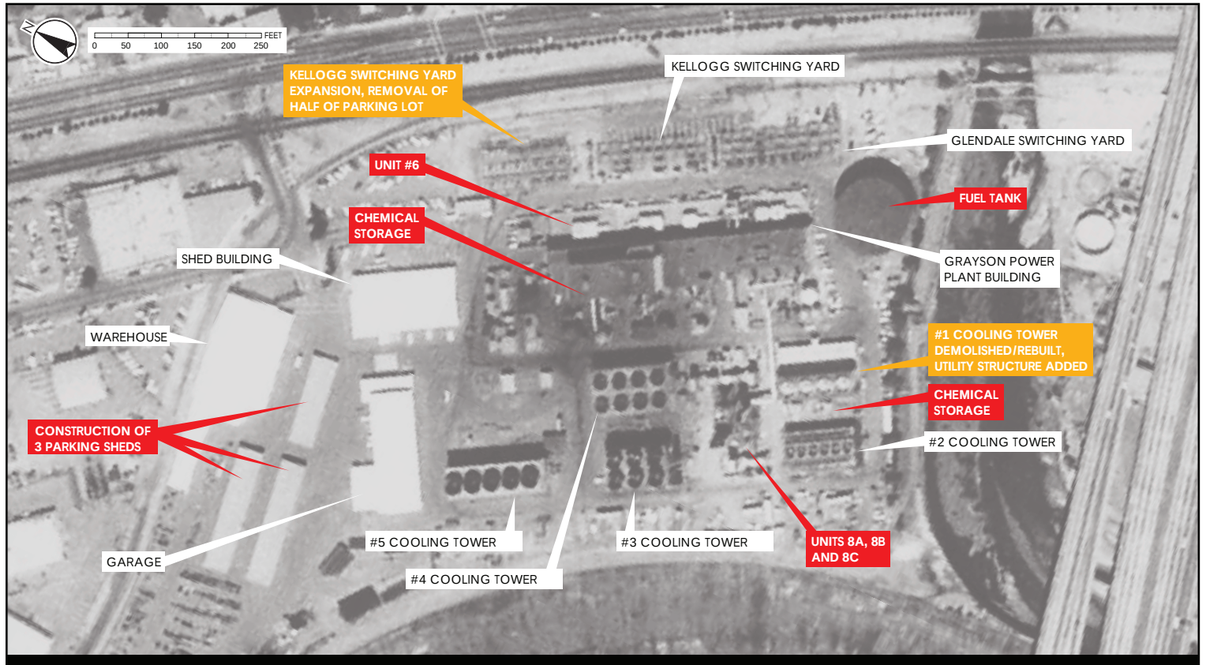
In conclusion, the only pre-1970 structures that appear to retain their original footprint at the Plant are the boiler building, Cooling Tower #3, Cooling Tower #4, Cooling Tower #5, warehouse, shed building, garage and two parking sheds. The only pre-1970 structure that remains intact with no modification or alteration is Cooling Tower #5.



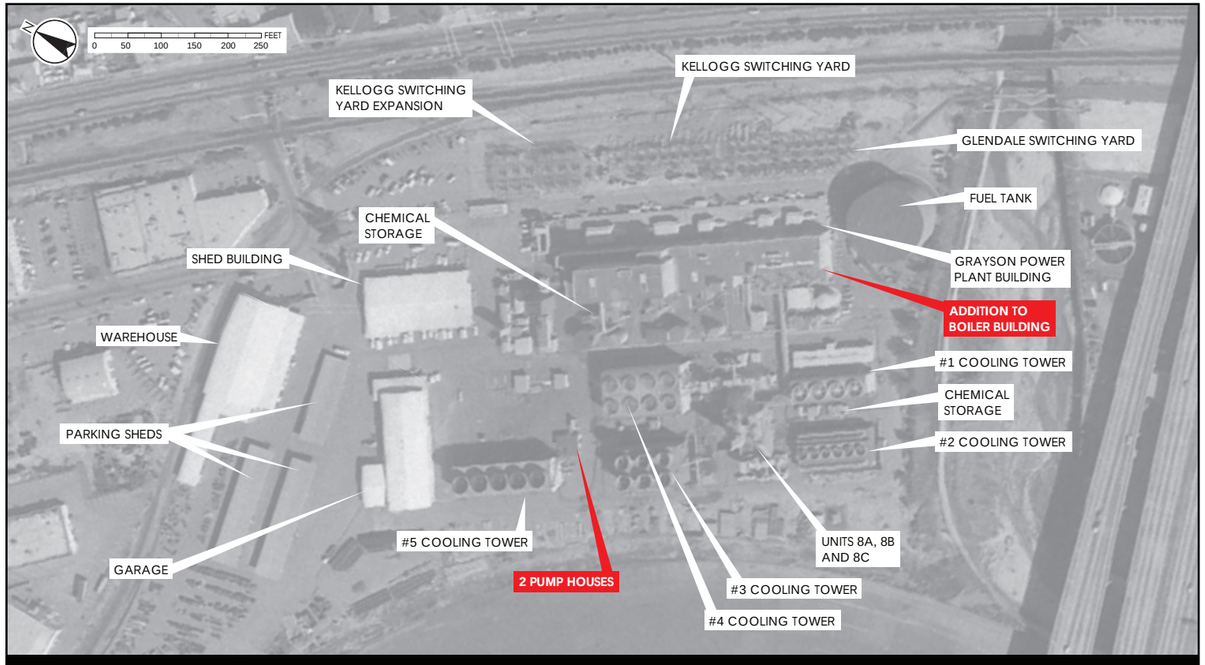
AERIAL 1 Date 1952, Flight Year 1952, Source: USGS



AERIAL 2 Date 1964, Flight Year 1964, Source: USGS



AERIAL 3 Date 1977, Flight Year 1977, Source: EDR Proprietary Brewster Pacific



AERIAL 4 Date 1979, Flight Year 1979, Source: EDR Proprietary Brewster Pacific

LEGEND: EXISTING STRUCTURE | MODIFIED STRUCTURE | NEW STRUCTURE

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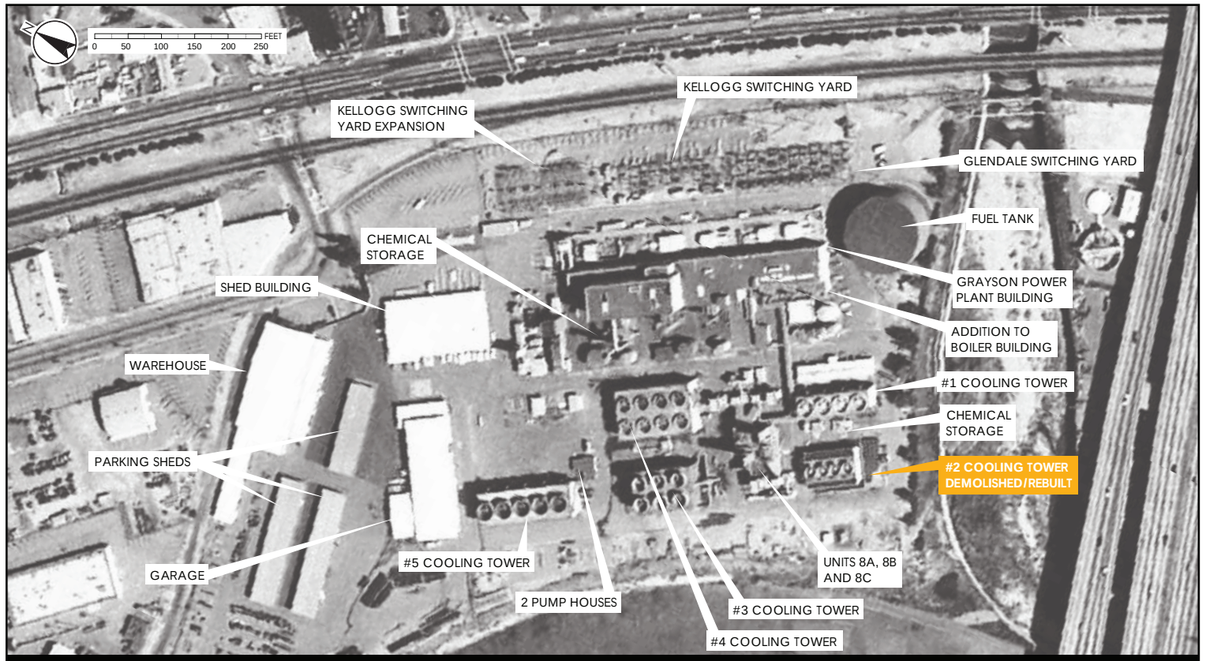
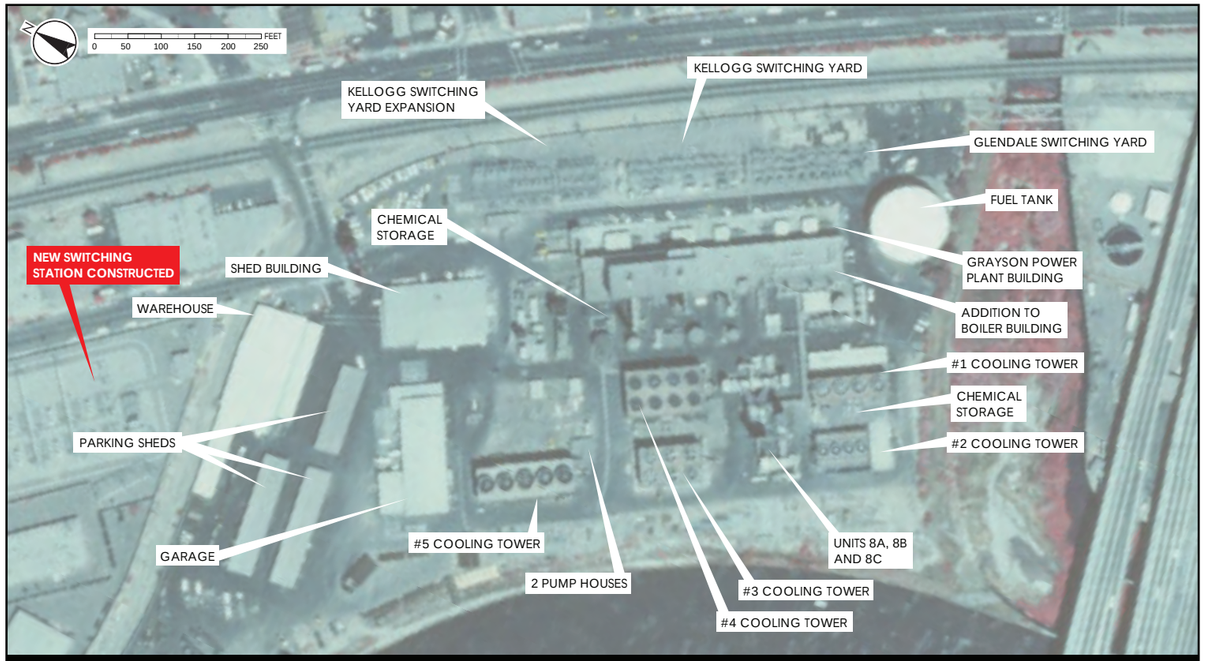
Stantec

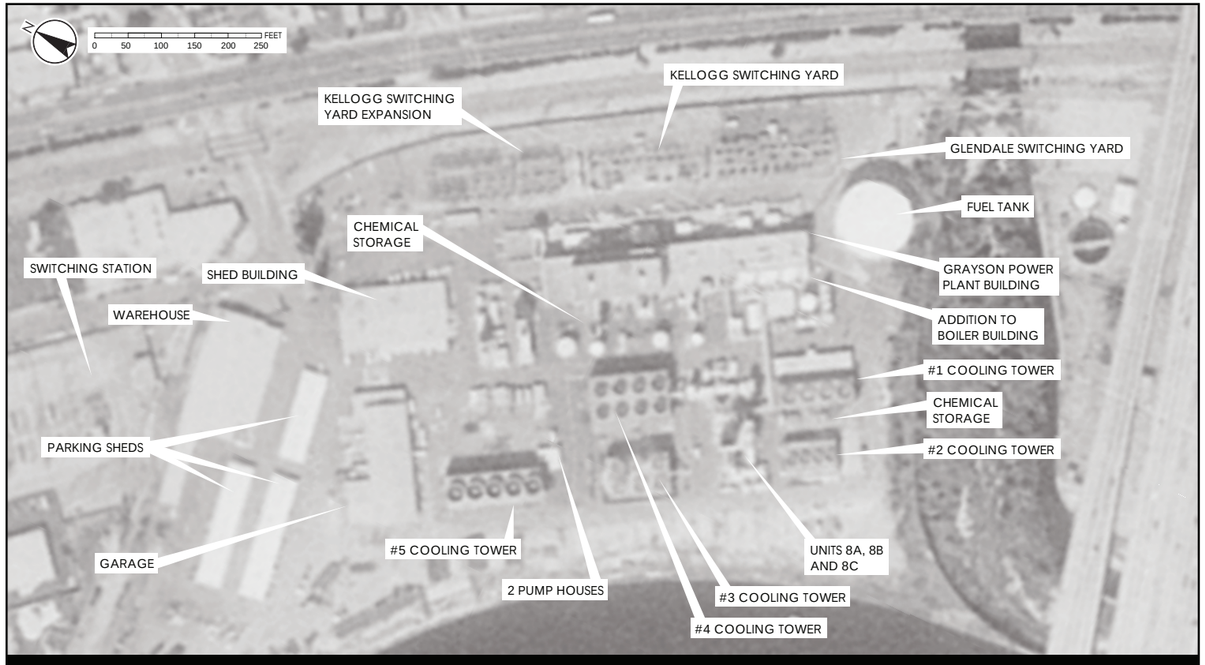
Figure 15
Grayson Power Plant Aerial Photographs 1952-1979



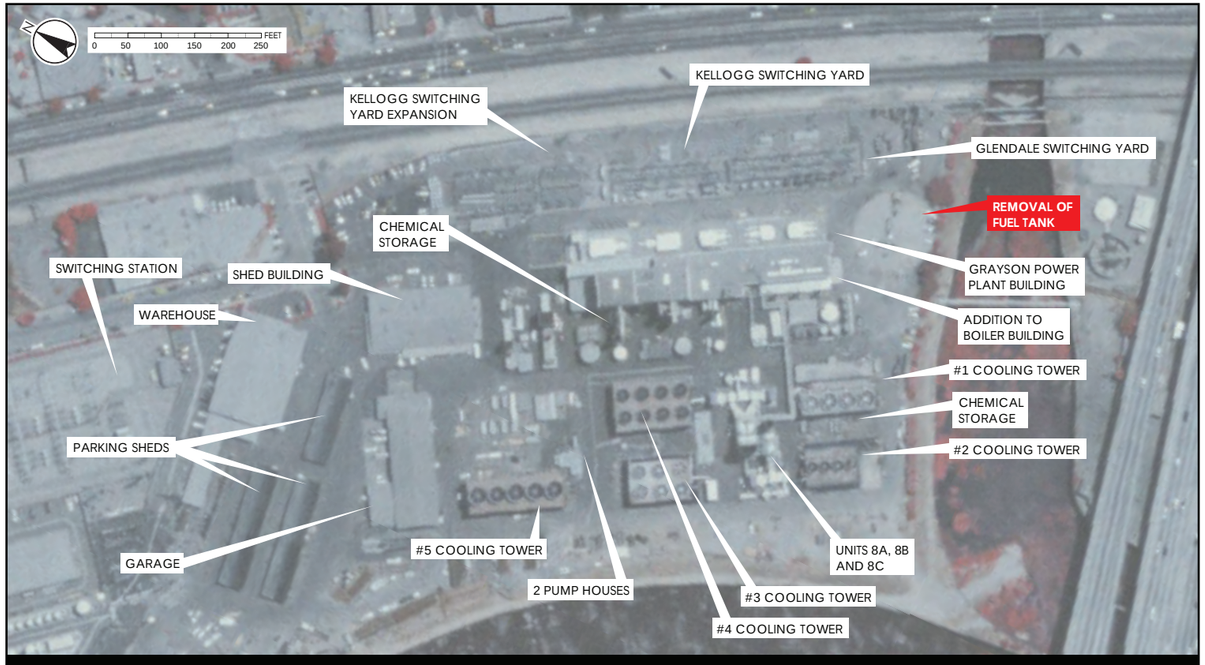
AERIAL 5 Date 1981, Flight Year 1981, Source: EDR Proprietary Brewster Pacific



AERIAL 6 Date 1989, Flight Year 1989, Source: USGS



AERIAL 7 Date 1994, Acquisition Year 1994, Source: USGS/DOQQ



AERIAL 8 Date 2002, Flight Year 2002, Source: USGS

LEGEND: EXISTING STRUCTURE | MODIFIED STRUCTURE | NEW STRUCTURE

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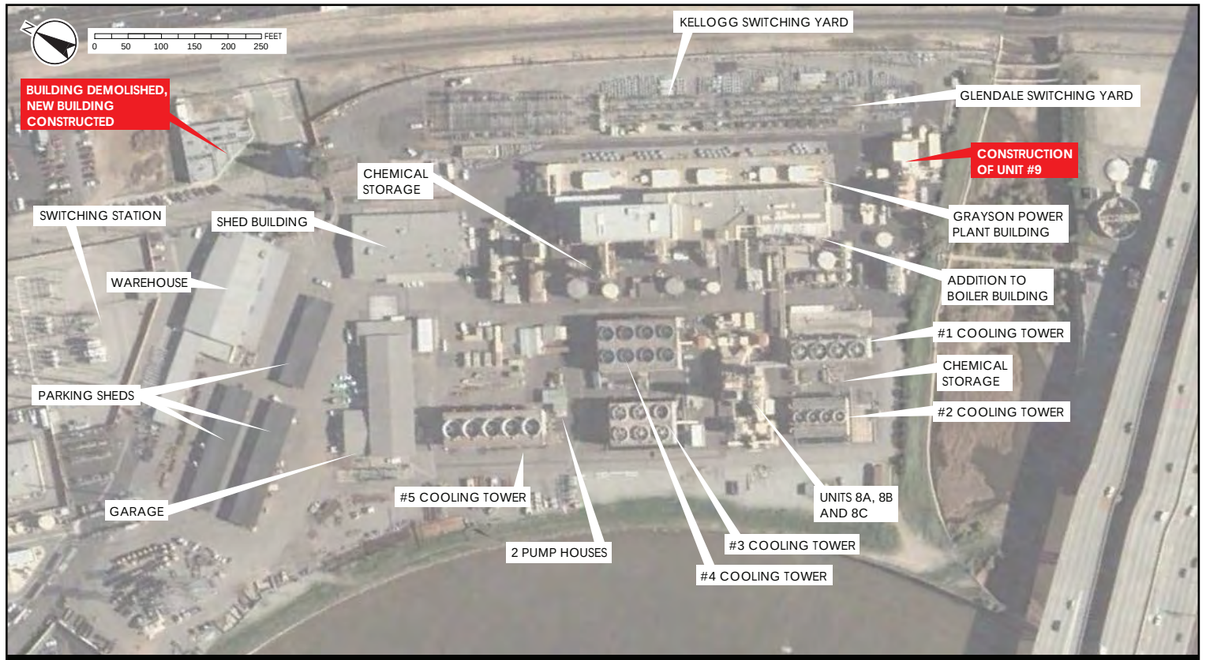
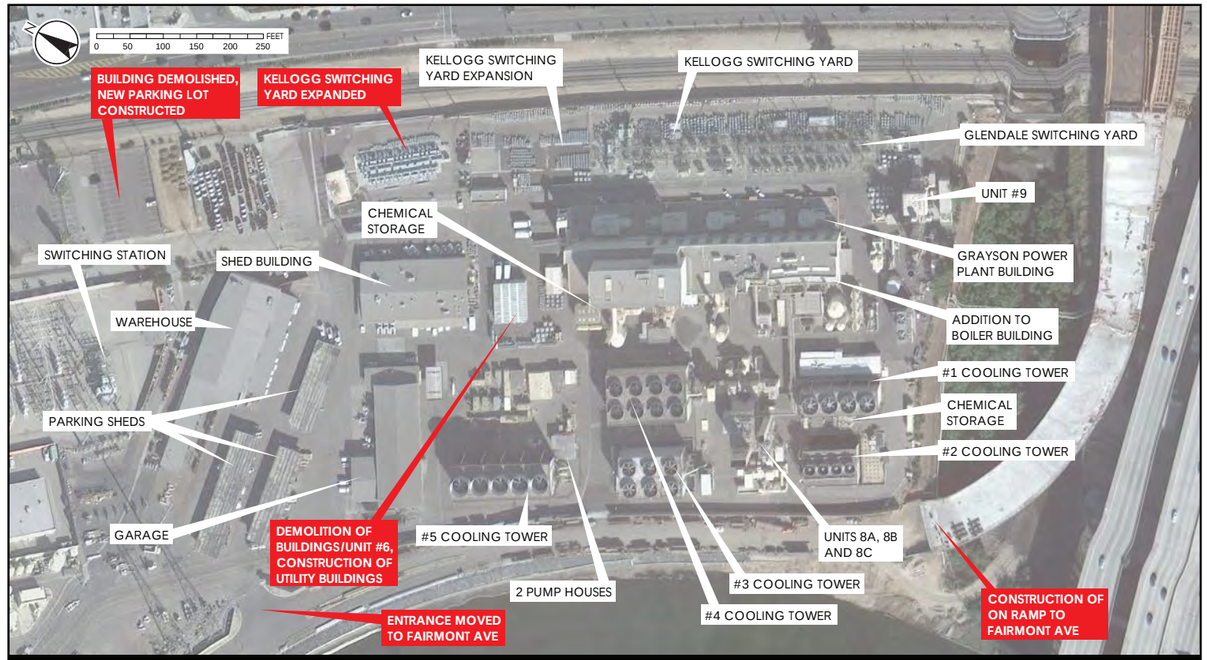
Stantec

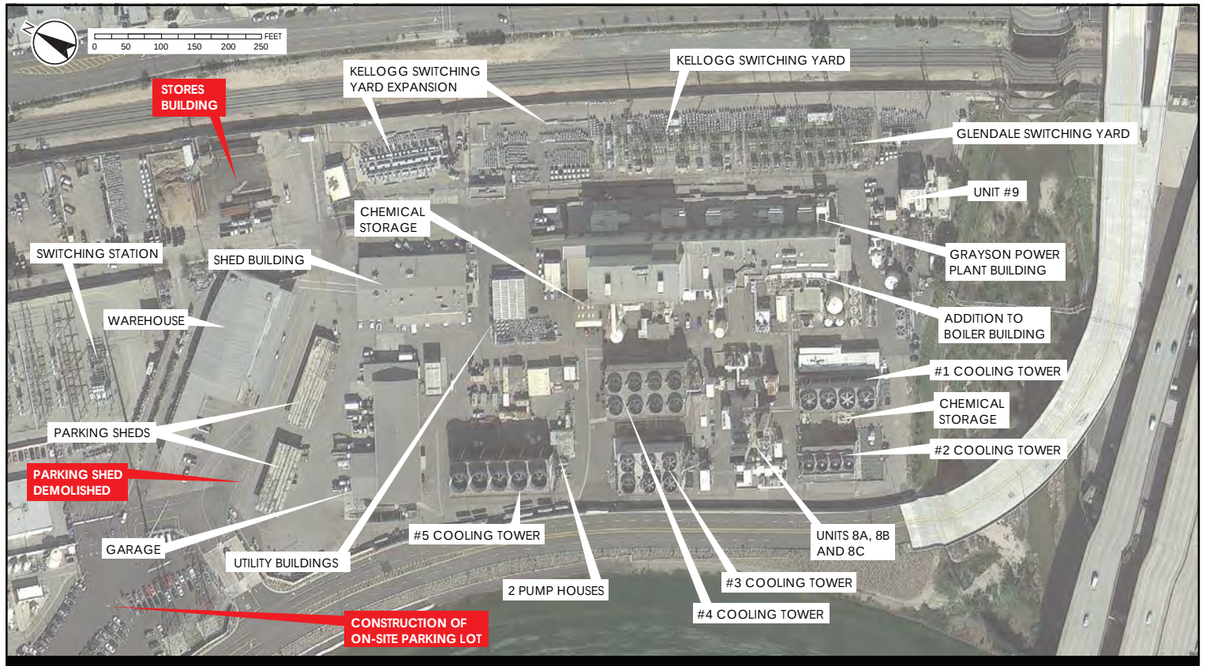
Figure 15
Grayson Power Plant Aerial Photographs 1981-2002



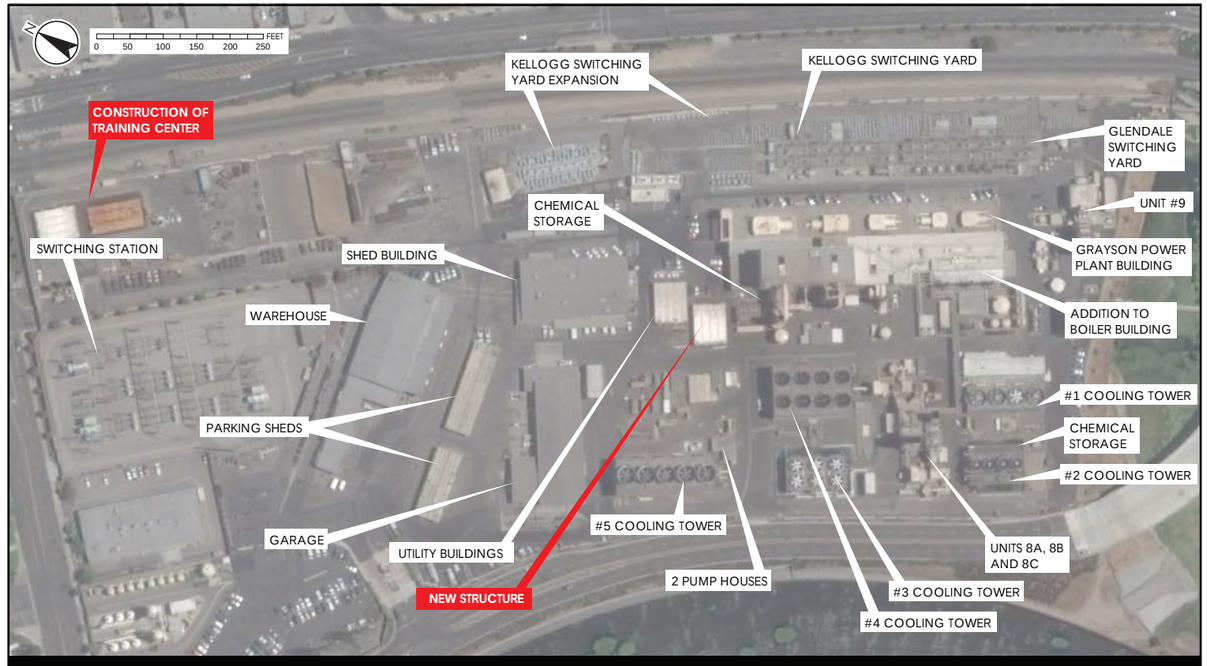
AERIAL 9 Date January 2005, Acquistion Year 2005, Source: Google Earth



AERIAL 10 Date November 2009, Aqcuistion Year 2009, Source: Google Earth



AERIAL 11 Date March 2011, Acquisition Year 2011, Source: Google Earth



AERIAL 12 Date August 2012, Acquisition Year 2012, Source: Google Earth

LEGEND: EXISTING STRUCTURE | MODIFIED STRUCTURE | NEW STRUCTURE

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Stantec

Figure 15
Grayson Power Plant Aerial Photographs 2005-2012

4.2 GRAYSON POWER PLANT BUILDING PERMITS

The City of Glendale provided permits for the Plant that included building/demolition, electrical, mechanical, plumbing/gas, as well as heating/ventilating/cooling/refrigeration (HVCR) permits. In total over 75 permits were reviewed by Stantec. Some of the permits did not provide specific enough information about improvements to the Plant's structure. In addition, many of the sketches submitted on the permits are unclear in terms of their location at the Plant. Table 4 below summarizes 57 of the 74 permits reviewed that contain relevant information in regard to changes on the Plant. These changes include seismic improvements, construction of specific structures and buildings, and demolition of structures on the site. Thirty-nine permits are building or demolition permits, 11 permits were electrical, three mechanical, and four are HVCR permits. Some of the projects associated with these permits are visible in the aerials (see Section 5.1 above) whereas other changes are too minute or represented changes to the interior of on the Plant not visible per the aerial analysis. Overall, the building permits articulate the numerous additions and alterations to buildings or demolition of structures on the Plant site over time.

Table 4 City of Glendale Building Permits

Permit No.	Date	Permit Type	Project Description
45068	March 5, 1963	Building Permit	Constructed a substructure to 1st floor for Unit #5 as an addition that is 100 foot long and 122 foot wide. A concrete superstructure with a steel roof frame with plaster and composition.
59452	January 17, 1964	Building Permit	Constructed a new concrete cooling tower basin, specific to one of the new towers (#3, #4, or #5).
59454	January 17, 1964	Building Permit	Constructed a new concrete block chemical pump house with concrete roof.
59450	January 17, 1964	Building Permit	Constructed a steel-framed control room with stucco walls, cement plaster and composition shingles.
70897	July 26, 1964	Building Permit	Constructed an addition to Unit #5 as a superstructure and misc. fittings.
59215; 59217	August 12, 1970	Building Permit	Constructed one metal shed.
59219	August 12, 1970	Building Permit	Constructed all metal sheds as new auto parking.
27351	May 17, 1971	Building Permit	Constructed an electrical substation, control house.
74352	May 16, 1972	Building Permit	Constructed an addition to Unit #6 as a fuel tank to the steam plant.

Permit No.	Date	Permit Type	Project Description
76951	May 17, 1972	Building Permit	Constructed a 120-foot diameter, 48-foot high fuel tank, adjacent to steam plant.
91134	December 6, 1973	Building Permit	Constructed a fuel storage shed and AC paving.
n/a	December 19, 1975	Building Permit	Installed seismic improvements on Cooling Tower #1.
22202	January 17, 1977	Building Permit	Constructed a new chemical storage building.
22204	May 17, 1977	Building Permit	Constructed Unit #8 as a utility building.
N/d	September 27, 1977	Building Permit	Constructed an addition to the power plant in expanding wet lab.
67723	April 16, 1980	Building Permit	Demolished a Cooling Tower #2
70060	May 16, 1980	Electrical Permit	Electrical inspections.
86682	June 16, 1981	Building Permit	Constructed a 10-foot high fence with concrete footings.
86682	September 27, 1982	Building Permit	Construction of a 10' fence with precast concrete at Flowers Street.
69130	April 16, 1983	Building Permit	Installation of new cooling tower
8385B003	July 29, 1985	Building Permit	Construction of steel-framed open parking shed
6974B006	February 10, 1987	HVAC or R Permit	Converted furnaces to natural gas.
3701B11	July 28, 1989	Building Permit	Constructed a concrete block and wood-framed addition as a generator.
47758011	August 18, 1989	Electrical Permit	Electrical inspections.
134980	October 27, 1992	Electrical Permit	Constructed an underground rigid conduit from boiler building.
M10035498	February 18, 1993	Mechanical Permit	Constructed 3 new compressors.
n/a	November 24, 1993	Building Permit	Constructed a 120 feet diameter, 48 feet high fuel/oil storage tank near steam plant.
M10041817	December 29, 1993	Mechanical Permit	Installed two 3 horsepower and 4 horsepower compressors.
E10051972	June 27, 1995	Electrical Permit	Installed 8 branch circuits.

Permit No.	Date	Permit Type	Project Description
E10057544	April 8, 1996	Electrical Permit	Electrical alterations to the Plant.
P10057654	April 12, 1996	Plumbing/Gas Permit	Ground plumbing.
P10057796	April 22, 1996	Plumbing/Gas Permit	Alteration of waste line.
BB20000947	June 1, 2000	Building Permit	Constructed the foundation for an ammonia tank and shackle structure with 4 foot high containment walls.
BE20000916	January 7, 2001	Electrical Permit	Installed one circuit and completed 2 hours of electrical inspections.
BB20011252	January 9, 2002	Building Permit	Constructed a 9400-gal ammonia storage tank between Cooling Tower #3 and Unit #8A.
BB20020270	August 20, 2002	Building Permit	Constructed a 40-foot high aluminum flagpole on the corner of Air Way and Bekins Way.
BB20030204	August 3, 2003	Building Permit	Constructed of a steel canopy for two new fuel dispensers; removal of three existing fuel dispensers; fuel pipe relocation and existing tank modifications with removal of existing two underground tanks
BB20030719	October 18, 2003	Building Permit	Constructed a foundation for a fan in Unit #5's boiler as well as retrofit.
BB20050264	September 13, 2005	Building Permit	Constructed a foundation for electrical equipment in a control building that houses equipment for the Kellogg switching yard.
BE20050368	October 23, 2005	Electrical permit	Installed 10 branch circuits, 201-600 amp service district panel, 600-volt switchboard, one horsepower motor, and two 20-horsepower motors.
BB20050550	November 28, 2005	Building Permit	Constructed a concrete block electrical controls enclosure northwest of Kellogg yard made of a combination of structural steel, rebar, & concrete.

Permit No.	Date	Permit Type	Project Description
BB20070259	September 4, 2007	Building Permit	Constructed two 100 square-foot offices on west side of superintendent's building that included one unisex ADA compatible restroom.
BE20070310	September 24, 2007	Electrical Permit	Constructed three branch circuits; ADA, unisex restroom, and two offices.
BB20080697	July 18, 2008	Building Permit	Demolished a 10,000 square-foot, steel-framed structure and 100 linear-feet, chain-link fence.
BB20080696	January 14, 2009	Demolition Permit	Demolition/Dispose of 45 linear feet of 8 foot high, precast concrete walls with foundations, northwest of Superintendent's Office and Kellogg switchyard. The 10,000 square-foot, steel-framed structure at the Kellogg Switchyard was replaced, along with concrete foundation and electrical equipment.
20080698	January 14, 2009	Building Permit	Demolition and removal of 170 linear-feet of 10' high walls and foundation.
BE20100811	April 25, 2010	Electrical Permit	Constructed 3 branches and 1 motor
BB20100179	August 31, 2010	Demolition Permit	Demolition of steel canopies used for truck parking
BB20100178	August 31, 2010	Building Permit	Constructed a new parking lot in southwest corner.
BB20100177; BB20100180	August 31, 2010	Building Permit	Constructed 12' high perimeter wall with powered and manual gates; 8' high chain-link and wrought iron fence, new vehicle entrance with barrier gates on the south and southwest corner of the GWP near LA River.
BE20100266	October 20, 2010	Building Permit	Constructed 42 Branch circuits, one 201-AMP to 600AMP service, two district panels, 1-horsepower to 5-horsepower motor, and 1-switchboard.

~~Permit No.~~	~~Date~~	~~Permit Type~~	~~Project Description~~
~~BB1100817~~	~~January 12, 2011~~	~~Building Permit~~	~~Removal of partial concrete block wall and reinstall partial concrete block wall, located on garage & machine shop near Superintendent's office and meter shop.~~
~~BE20100687~~	~~March 22, 2011~~	~~Electrical Permit~~	~~Constructed an addition of six branch circuits and two motors on the roof.~~
~~BB1201470~~	~~January 18, 2012~~	~~Building Permit~~	~~Constructed a foundation (only) for a temporary modular trailer.~~
~~BP1208149~~	~~March 28, 2012~~	~~Plumbing/Gas Permit~~	~~Water and sewer improvements~~
~~BM1207519~~	~~July 12, 2012~~	~~Mechanical Permit~~	~~Installed two heating appliances and two air conditioning units.~~
~~BE 20030148~~	~~August 8, 2003~~	~~Electrical Permit~~	~~Modernized underground storage and tank system, new dispenser, and fuel island; 10 branch circuits, three motors up to 1-horsepower.~~

5.0 ARCHITECTURAL DESCRIPTION

5.1 GRAYSON POWER PLANT SITE

The Plant site is situated on 11-acre parcel with its main entrance off Fairmont Avenue and represents numerous buildings and engineering structures (see Figure 2 and Figures 16-43) that include a boiler building, five cooling towers, nine boiler units, two switching yards, and miscellaneous buildings. The Plant represents approximately 17 building and structures with probably another five miscellaneous utilitarian buildings.

Since there have been significant changes on the site, each resource type in the Plant was reviewed per its original construction date and if it pre-dated 1970 as well as if each resource has architectural integrity or has been altered over time.

5.2 GRAYSON POWER PLANT, BOILER BUILDING

The Grayson Power Plant Boiler Building is a Streamline Moderne-style building, initially built in 1941, and expanded in 1947 and 1953. Facing southeast, the boiler building is set on a northwest-southeast axis and massing is predominantly rectangular divided into three levels and each elevation asymmetrical (Figures 16-26). Architecturally, the boiler building is 2-3-stories high and is framed with structural steel set on a poured concrete pier foundation (see Figure 16-17). The lower floor extends up a floor level on a poured concrete structure with a steel-framed superstructure set on top of the concrete walls; a second steel-framed structure is set on the northwest corner, which houses Unit 3. Streamline Moderne character-defining details are evident as linear lines in the cementitious paneling, illuminating stringcourses on the building's upper southeast corner addition, added during a 1953 expansion to building for Unit #3.

The building has a flat roof with metal coping at the top. The exterior of the building is clad with multiple building materials that include horizontal asbestos siding and horizontal metal sheathing that is bolted to the steel framing. The cementitious siding is visible on the interior of the building as well. A Streamline Moderne style-rolling directional crane, which services the boilers, turbines, and generators, is located on the northeast elevation (see Figure 17). Each of the five turbines is covered with a Streamline Moderne enclosure (see Figure 18-19). Copper box lettering in the same style is located on the corner and state: "CITY OF GLENDALE/PUBLIC SERVICE DEPARTMENT/STEAM ELECTRIC GENERATING PLANT" (see Figure 20-21). The northeast elevation of the building has a dock with boilers and equipment located on the northwest elevation (see Figure 22). The northwest elevation is where all the mechanical equipment and numerous boiler stacks for Boilers 1, 2, and 3. New equipment is evident for Boiler Unit #3 on the northwest corner.

Multiple openings punctuate the elevations of the boiler building on all elevations. The boiler building retains its original windows, which include structural glass blocks on the northeast

elevation and metal-framed industrial awning windows on the southeast elevation (Figure 19 and 26).

Currently the building houses six boilers and is centrally located near the control room (Figures 27-33). The interior of the building is open with a catwalk or mezzanine floor of metal grating constructed on the west wall in operating the power equipment that include the boilers above and turbines, which attached to the concrete floor platforms. The corresponding boiler stacks and scrubbers are located on the exterior of building along the west wall. Much of the controls and other equipment installed prior to 1965 is also extant; although they have been mothballed, aka are no longer active.

5.3 GRAYSON POWER PLANT, BOILER UNITS

The Grayson Power Plant site has nine boiler units that range in construction dates and are located southwest of the main boiler building (Figures 31-33). The three-combined cycle repowering unit utilizes similar gas turbine engines as a 707 aircraft to drive two heat recovery generators. The unit's exhaust heat is reused to power the first two steam boilers constructed at the plant (Cook 1977; Ralph 1977).

Note: Tables five through eight below include discussion of the Plant's components/structures reference alteration dates and use the term "mothballed" to reference that a component/structure is existent but no longer in use. The "Architectural Integrity" column on the far right of the tables references the component/structure's physical identity that existed during the period of significance (1941-1970). If a component or structure remained unaltered from its period of construction and was constructed prior to 1970 (45 year or older) it is determined to contain "Architectural Integrity" for the purposes of this evaluation. This should not to be confused with the seven aspects of integrity per the NRHP and CRHR, which is discussed in the evaluation section of this report (Section 8.0).

Table 15 Construction and Alteration Dates of Boiler Units

Unit No.	Built Date[1]	Alteration Dates[2]	Architectural Integrity Yes/No?
Unit #1	1941	Intact; Mothballed	No
Unit #2	1947	Intact; Mothballed	No
Unit #3	1953	Modified 1983; 1989; 1994	No
Unit #4	1959	Modified 1983; 1989; 1994	No
Unit #5	1964	Modified 1983; 1989; 1994	No
Unit #6	1972	Demolished	N/A
Unit #7	1974	Demolished	N/A
Unit #8A, #8B, #8C	1977	Intact	N/A (less than 45 years old)

Unit No.	Built Date[1]	Alteration Dates[2]	Architectural Integrity Yes/No?
Unit #9	2003	Intact	N/A (less than 45 year old)

1 Built Dates from the City of Glendale Department of Water & Power L.W. Grayson Steam Electric Generating Station.
2 Aerial analysis from 1952-2005 at the Nationwide Environmental Tile Research, LLC (NETR), www.historicaerials.com

As utilitarian structures, the exterior surfaces of the structures are constructed of metal with various metal pipes and venting systems throughout. Units 1 and 2 are located within the boiler building and have been mothballed, whereas Unit 3, 4, and 5 are located along the southwest elevation of the boiler building (City of Glendale 2014). These latter three units were commercially upgraded in 1983, 1989, and 1994. Oil tanks, adjacent and connected to the units have been removed or retired. Units 6 and 7 were demolished, and were not 45 years old or older, built between 1972-74. Units 8A, 8B, and 8C, were constructed in 1977, and are not 45 years old or older, and therefore not considered for the purposes of this evaluation. The last Unit added to the plant was Unit 9, built in 2003.

Of the nine units associated with cooling towers, 2 units are intact; however, have been mothballed therefore are not currently being used. Two units are not 45 years old or older whereas two other units have been demolished.

5.4 GRAYSON POWER PLANT, COOLING TOWERS

The Plant has five cooling towers located on the property, which were initially constructed between 1941 and 1964, and as part of a closed system with a cross-flow design.

Table 26 Construction and Alteration Dates of Cooling Towers

Cooling Tower No.	Built Date[1]	Alteration Dates[2]	Architectural Integrity Yes/No
Cooling Tower #1	1941	Altered 1972-1977	No
Cooling Tower #2	1947	Altered 1977-1980	No
Cooling Tower #3	1953	Burned in 2010	No
Cooling Tower #4	1959	2001; 2011	No
Cooling Tower #5	1964	Intact	No

1 Built Dates from the City of Glendale Department of Water & Power L.W. Grayson Steam Electric Generating Station.
2 Aerial analysis from 1952-2005 at the Nationwide Environmental Tile Research, LLC (NETR), www.historicaerials.com.

Each cooling tower is associated with one boiler, such as Cooling Tower 1 is associated with Boiler Units, 1A and 1B, and is set on a reinforced poured concrete water tank that are belowground. The towers' walls are between 2-3-feet thick and are poured concrete walls that enclose the tanks. Each cooling unit has a series of stacks that vary from 4 to 6 on top. Cooling

Towers 1 and 2 are designed with four stacks, which has splayed concrete sidewalls, while Cooling Tower 3 is constructed with six stacks, Cooling Tower 4 has eight stacks, and Cooling Tower 5 with five stacks (Figures 26-30). Additional features of the cooling towers include a louvered wall, which provides air circulation to cool the water from the boilers and wooden roof decks.

All of the cooling towers, with the exception of Cooling Tower 5, have been either rebuilt or significantly altered due to mechanical upgrades or natural disaster, such as fire. Cooling Tower 1 was altered between 1972-1977 with the construction of a maintenance shop east of the tower and the demolition of a set of 6 stacks (NETR Online 2015). Cooling Tower 2 was reduced from six stacks to four stacks sometime between 1977 and 1980 (NETR Online 2015). Both Cooling Tower 1 and 2 have been mothballed. Cooling Tower 3 caught fire and significantly burned in 2010 (City of Glendale 2010; Wells 2010). Cooling Tower 4 was also heavily repaired (City of Glendale 2011). Cooling Tower 5 is the only tower that appears to have not been altered. Of the five cooling towers located on the plant site, only one tower has architectural integrity, meaning it has not been altered or rebuilt in any way since its original construction over 45 years ago.

5.5 GRAYSON POWER PLANT, SWITCHING YARDS

There are two switching yards, or racks, east of the boiler building and are labeled as the Kellogg and the Glendale switching yards and adjacent to the Southern Pacific railroad line, as well as parallel with San Fernando Road.

Table 37 Construction and Alteration Dates of Switching Yards

Switching Yard No.	Built Date[1]	Alteration Dates[2]	Architectural Integrity Yes/No?
Glendale	1952	1964-1977; 2003	No
Kellogg	1972-77	2003	N/A (less than 45 years old)

1 Built Dates from the City of Glendale Department of Water & Power L.W. Grayson Steam Electric Generating Station.
2 Aerial analysis from 1952-2005 at the Nationwide Environmental Tile Research, LLC (NETR), www.historicaerials.com

The yards are used as part of the power grid in transferring power into lines; the yards are not 45 years old or older, and were constructed as well as upgraded between 1977 to the present, which included new equipment and expansions. One switching yard, Kellogg, is not 45 years old or older, whereas the Glendale switching yard has been altered and expanded over time.

5.6 ADJACENT TO THE KELLOGG GAS INSULATED STATION IS NEW CONSTRUCTION LOCATED NORTH OF THE GLENDALE SWITCHING YARD. "MISCELLANEOUS BUILDINGS"

Five miscellaneous utilitarian buildings are located on the Plant site northwest of the boiler building (see Figure 4). These five buildings are typical gable or flat-roof buildings with roll-up doors and aluminum sliding glass windows. The parking sheds are flat-roof open structures where vehicles are housed. None of these buildings will be impacted by the proposed project (see Figure 2).

Table 48 Construction and Alteration Dates of Miscellaneous Buildings at Plant

Building	Built Date[1]	Alteration Dates[2]	Architectural Integrity Yes/No?
Shed building	c.1964	Intact	Yes
Warehouse	c.1964	Intact	Yes
Garage	c.1964	Intact	Yes
Parking sheds (2)	1977	Not Historic	N/A (less than 45 years old)

1 Built Dates from the City of Glendale Department of Water & Power L.W. Grayson Steam Electric Generating Station.
2 Aerial analysis from 1952-2005 at the Nationwide Environmental Tile Research, LLC (NETR), www.historicaerials.com

PHOTOGRAPHS OF PROJECT SITE

Figure 16 Grayson Boiler Building: Northeast Elevation, View Looking Northwest

Figure 17 Grayson Boiler Building: Northeast Elevation, and Moving Crane on the Red Concrete Platform where Turbines are Located, View Looking Northwest

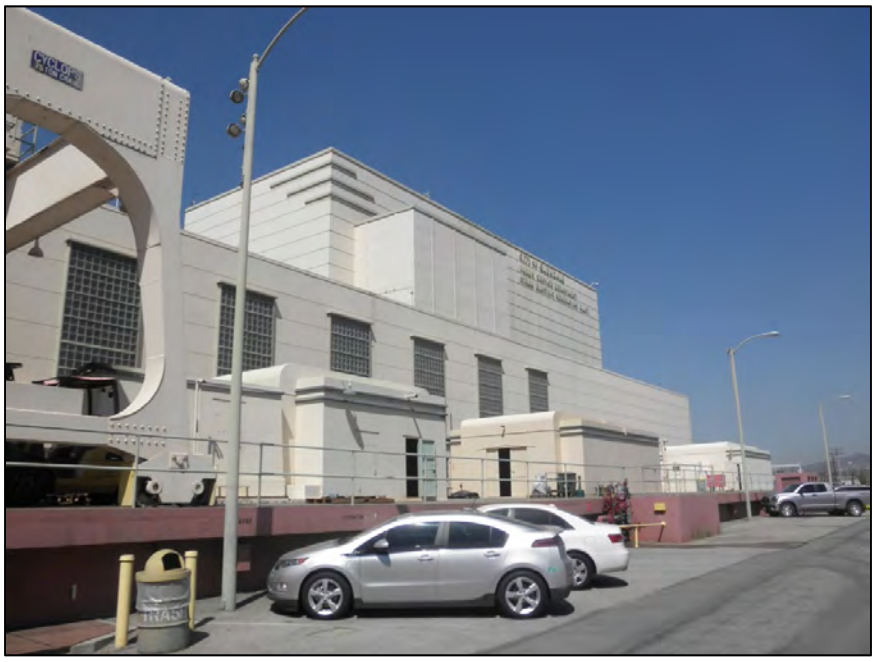


Figure 18 Grayson Boiler Building: Northeast Elevation, and its Two-Story Addition, View Looking Northwest

Figure 19 Grayson Boiler Building: Looking at Original Glass Block Windows and a Turbine at North End of Northeast Elevation, View Looking Northwest

Figure 20 Grayson Boiler Building: on North End and Bronze Lettering on Asbestos Panels' States: CITY OF GLENDALE/PUBLIC SERVICE DEPARTMENT/STEAM ELECTRIC GENERATING PLANT, View Looking Northwest.

Figure 21 Grayson Boiler Building: Northwest Elevation, View Looking Southeast

Figure 22 Grayson Boiler Building: Northwest Elevation, View Looking Southeast

Figure 23 Grayson Boiler Building: Northwest Elevation, View Looking Southwest

Figure 24 Grayson Boiler Building: Northwest Elevation, and Additions on the Two-Story Component, View Looking Southwest

Figure 25 Grayson Boiler Building: Southwest Elevation Looking at Boiler Stacks for Boilers 1 and 2 Center Rear as well as Boiler 3 in far left (right), Boiler 3 (right). View Looking Southeast

Figure 26 Grayson Boiler Building: Southeast Elevation, View Looking Northeast

Figure 27 Grayson Boiler Building: Interior Overview of Basement Floor Level, View Looking North

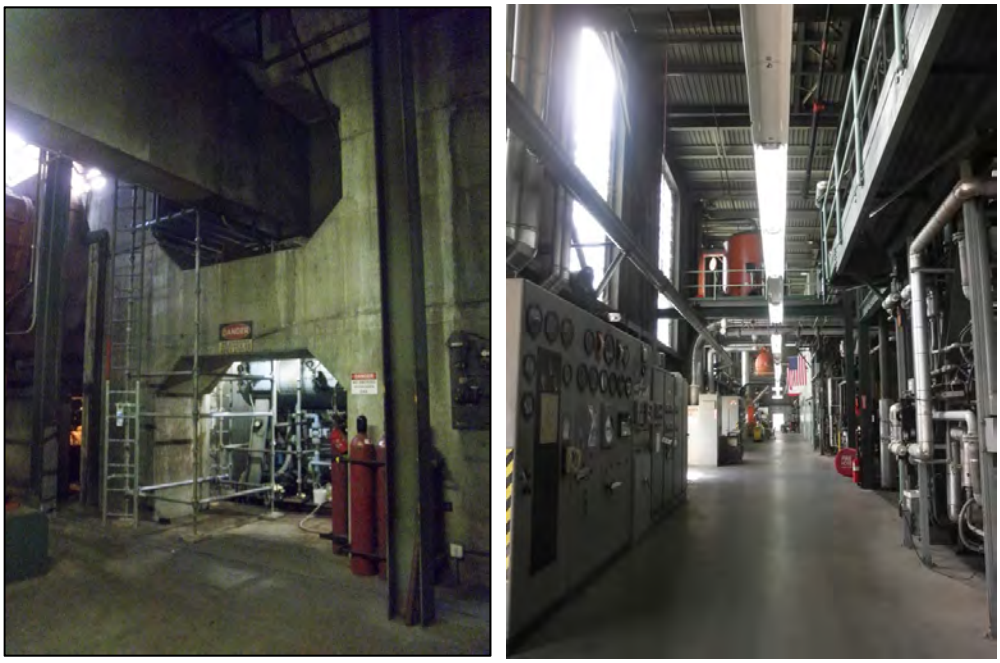


Figure 28 Grayson Boiler Building: Basement Level Depicting Concrete Structure Below Turbine and Generator 1, View Looking Northeast (left); Overview of Main Level, View Looking South (right)

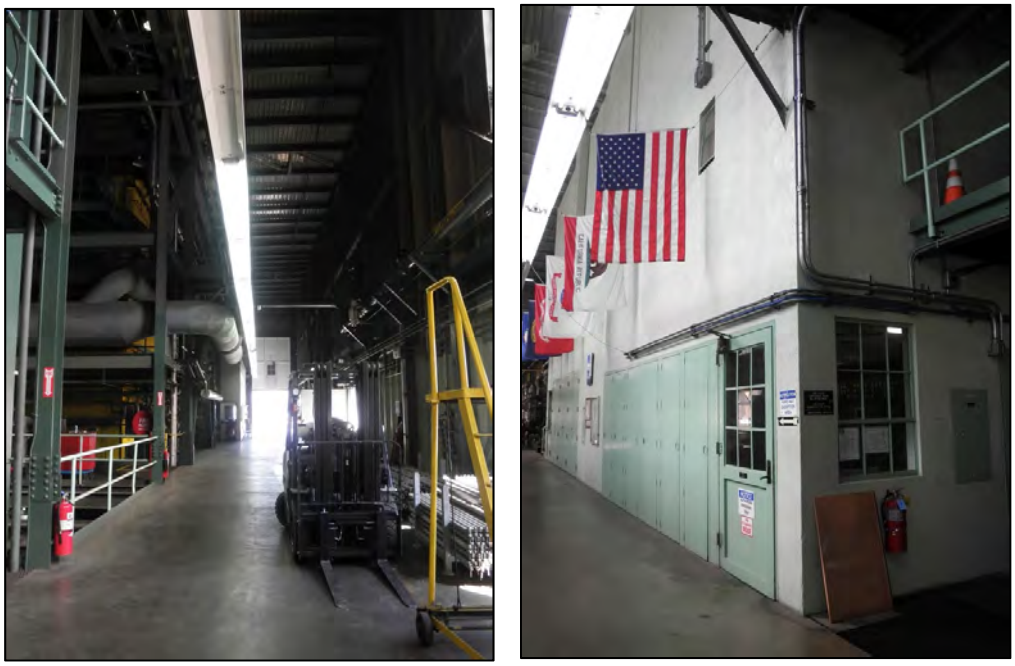


Figure 29 Grayson Boiler Building: Overview of First Floor, View Looking North (left); Control Room, View Looking Southwest (right)

Figure 30 Grayson Boiler Building: Interior of Control Room, View Looking Northwest

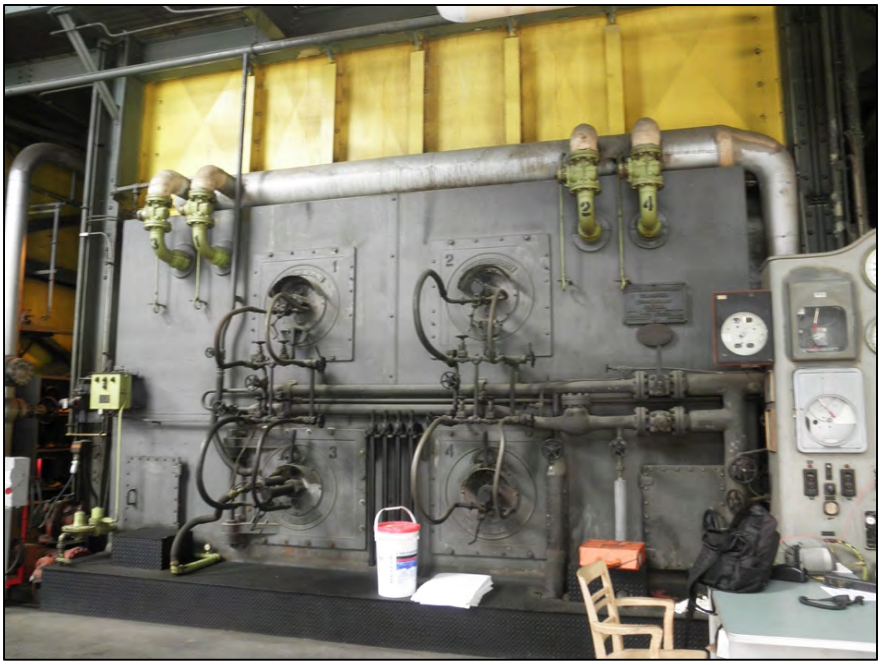


Figure 31 Grayson Boiler Building: Interior, View of Boiler 1B, Looking West

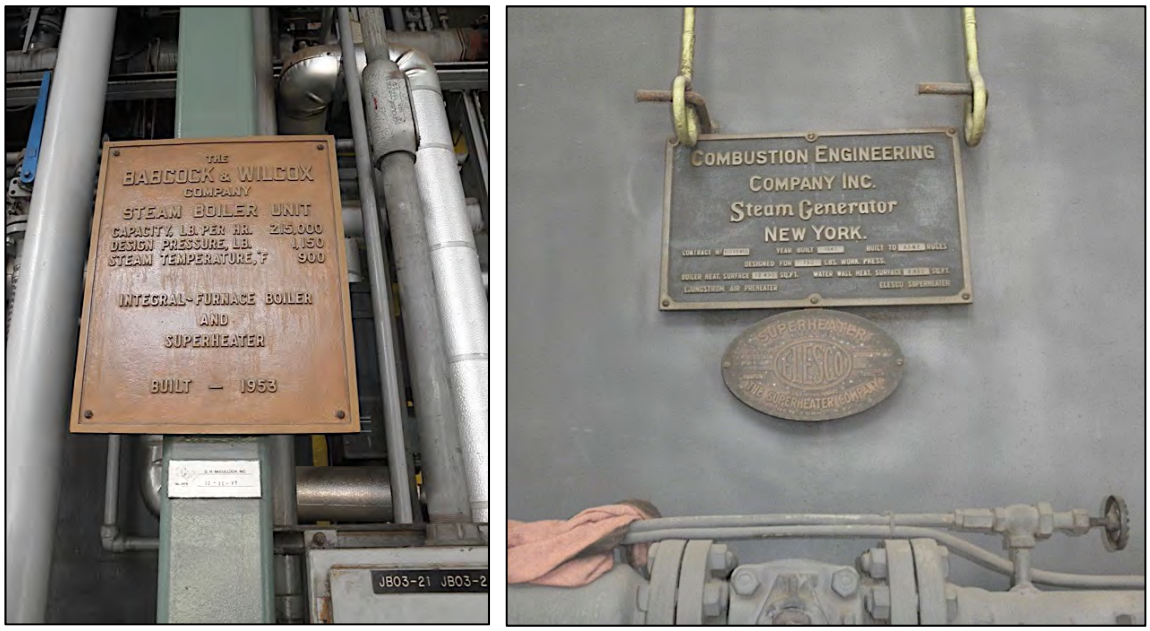


Figure 32 Grayson Boiler Building: Two Iron Mechanical Plaques. Iron Plaque for Steam Boiler Unit, Records Babcock Wilcox of New York in 1953 near Boiler 1A (left); Two Iron Plaques on Boiler 1A Record Steam Generator of New York from Combustion Engineering Company, Inc., built in 1940

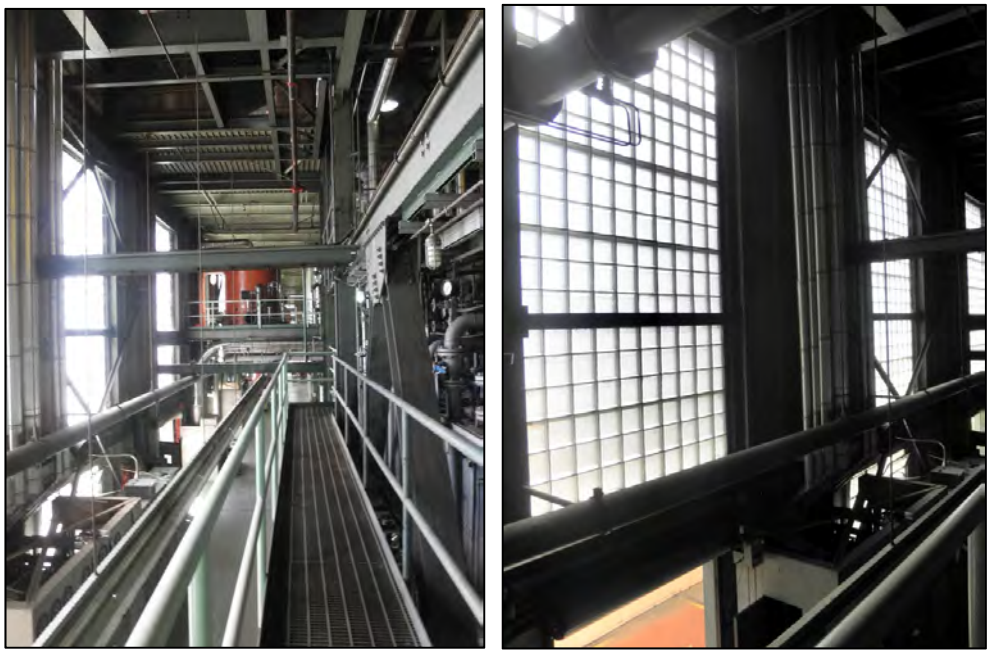


Figure 33 Grayson Boiler Building: Mezzanine, Looking Southeast (left); Structural Glass Block Windows on Northeast Elevation (right), Looking Southeast

Figure 34 Unit 8A, Looking West

Figure 35 Units 8A & 8B, View Looking Northeast

Figure 36 Units 8A, 8B, & 8C, View Looking Southeast

Figure 37 Cooling Tower No. 1 (Generator No. 9 in Background), View Looking East

Figure 38 Cooling Tower No. 2 (Cooling Tower No. 1 in Background), View Looking Southeast

Figure 39 Cooling Tower No. 3 (Cooling Tower No. 5 in Background), View Looking Northwest

Figure 40 Cooling Tower No. 4, View Looking Northeast

Figure 41 Cooling Tower No. 5, View Looking West

Figure 42 Kellogg Switching Station, View Looking Northeast

Figure 43 Glendale Switching Station, View Looking Southeast

6.0 HISTORIC EVALUATION CRITERIA

6.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Under CEQA, public agencies must consider the effects of their actions on both "historical resources" and "unique archaeological resources." As stated in PRC Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." ~~PRC Section 21083.2 requires agencies to determine whether proposed projects would have effects on "unique archaeological resources."~~

"Historical resource" is a term with a defined statutory meaning (PRC Section 21084.1 and California Code of Regulations (CCR) Section 15064.5 [a]). The term embraces any resource listed in or determined to be eligible for listing in the **NRHP and the CRHR.** ~~California Register of Historical Resources (CRHR~~). The CRHR includes resources listed in or formally determined eligible for listing in the NRHP, as well as some California State Landmarks and Points of Historical Interest.

Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be "historical resources" for purposes of CEQA (PRC Section 5024.1 and CCR, Title 14, Section 4850). Unless a resource listed in a survey has been demolished, lost substantial integrity, or a preponderance of evidence indicates that it is otherwise not eligible for listing, a lead agency should consider the resource to be potentially eligible for the CRHR.

In addition to assessing whether historical resources potentially impacted by a proposed project are listed or have been identified in a survey process (PRC 5024.1 [g]), lead agencies have a responsibility to evaluate them against the CRHR criteria prior to making a finding as to a proposed project's impacts to historical resources (PRC Section 21084.1 and CCR Section 15064.5 [a][3]). **CCR Section 15064.5 (a) describes a historical resource as any object, building, structure, site, area, place, or record.** ~~Following CCR Section 15064.5 (a) a historical resource is defined as any object, building, structure, site, area, place, record, or manuscript that:~~

~~Is historically or archeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political or cultural annals of California; and meets any of the following criteria:~~

- ~~Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;~~
- ~~Is associated with the lives of persons important in our past;~~

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

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

For historic structures, CCR Section 15064.5 (b)(3) states that a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995) will mitigate impacts to a less-than-significant level. Potential eligibility also rests upon the integrity of the resource. Integrity is defined as the retention of the resource's physical identity that existed during its period of significance. Integrity is determined through considering the setting, design, workmanship, materials, location, feeling, and association of the resource.

As noted above, CEQA also requires lead agencies to consider whether projects will impact "unique archaeological resources." PRC Section 21083.2 (g) states that a "unique archaeological resource" means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, a high probability exists that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;

- Has a special and particular quality such as being the oldest of its type or the best available example of its type; and/or

- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Treatment options under PRC Section 21083.2 include activities that preserve such resources in place in an undisturbed state. Other acceptable methods of mitigation under PRC Section 21083.2 include excavation and curation or study in place without excavation and curation (if the study finds that the artifacts would not meet one or more of the criteria for defining a "unique archaeological resource").

Advice on procedures to identify cultural resources, evaluate their importance, and estimate potential effects is given in several agency publications such as the series produced by the Governor's Office of Planning and Research.

6.2 NATIONAL REGISTER OF HISTORIC PLACES AND CALIFORNIA REGISTER OF HISTORICAL RESOURCES

In order to be eligible for the NRHP or CRHR, a resource must be determined significant under at least one of the four criteria and retain integrity to its period of significance. The Criteria for the NRHP and Criterion for the CRHR are paraphrased below:

- **Criteria A/Criterion 1: Resources that are associated with events that have made a significant contribution to the broad patterns of our history;**
- **Criteria B/Criterion 2: Resources that are associated with the lives of significant persons in our past;**
- **Criteria C/Criterion 3: Resources that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction;**
- **Criteria D/Criterion 4: Resources that have yielded or may be likely to yield, information important in history or prehistory.**

In addition to significance under one or more of the criteria listed above, a resource must possess integrity, defined by seven aspects as follows:

- **Location: the place where the historic property was constructed or the place where the historic event took place.**
- **Design: the composition of elements that constitute the form, plan, space, structure, and style of a property.**
- **Setting: the physical environment of a historic property that illustrates the character of the place.**
- **Materials: the physical elements combined in a particular pattern or configuration.**
- **Workmanship: the physical evidence of the crafts of a particular culture or people during any given period of history.**
- **Feeling: the quality that a historic property has in evoking the aesthetic or historic sense of a past period of time.**
- **Association: the direct link between a property and the event or person for which the property is significant.**

NRHP analysis is based upon all pertinent cultural resources guidance and best practices including that of 36 CFR Part 800 and technical bulletins including *National Register Bulletin 15:*

***How to Apply the National Register Criteria for Evaluation.* CEQA analysis based on CEQA Guidelines outlined in Section 5024.1 of the California Public Resource Code.[1]**

6.3 CITY OF GLENDALE REGISTER OF HISTORIC RESOURCES CRITERIA

The City of Glendale has the Glendale Register of Historic Resources for resources considered eligible. The Glendale Register of Historic Resources has criteria similar to the CRHR (City of Glendale 2012c; City of Glendale 2014). The Glendale Register criteria include the following:

> ~~**Criterion 1**~~ Is the proposed historic resource identified with important events in national, state, or city history, or exemplify significant contributions to the broad cultural, political, economic, social, or historic heritage of the nation, state, or city;
>
> ~~**Criterion 2** is~~ **Is** the proposed historic resource associated with a person, persons, or groups who significantly contributed to the history of the nation, state, region, or city;
>
> ~~**Criterion 3**~~ Does the proposed historic resource embody the distinctive and exemplary characteristics of an architectural style, architectural type, period, or method of construction; or represent a notable work of a master designer, builder or architect whose genius influenced his or her profession; or possess high artistic values;
>
> ~~**Criterion 4**~~ Does the proposed historic resource yield, or have the potential to yield, information important to archaeological pre-history or history of the nation, state, region, or city; and/or
>
> ~~**Criterion 5**~~ Does the historic resource exemplify the early heritage of the city.

Integrity must also be determined for a property to be listed on the state register. The CRHR maintains a similar definition of integrity, while provided for a slightly lower threshold than the NRHP. The CRHR weighs integrity as much as significance when determining if a resource is eligible. The Glendale Register is silent on aspects of integrity. The assumption in this evaluation is that a resource, building, or structure would have some level of integrity to make it qualify for the local register (Jay Platt, personal communication, January 28, 2016).

[1] *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation*. National Park Service, 2002 Website accessed May 10, 2017: http://www.nps.gov/nr/publications/bulletins/nrb15/; California Public Resource Code, "Article 2, Historic Resources," http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC&sectionNum =5024.1. Accessed May 15, 2017.

7.0 ELIGIBILITY EVALUATION

Glendale's Grayson Power Plant served as a local power source since construction. While the power plant has maintained this role, it has not directly contributed to the early growth of the City, further it only supplemented electricity supplied by other utilities and by the 1937 constructed Hoover Dam. The power plant did supply the region with localized power, however, it is just a continuation of existing power supplies. By the time the power plant came online, in 1941, the City had been electrified for 32 years. Supply was high, the City, understandably preferred control of their own power supply. California, like much of the west had begun interconnection a series of previously independent transmission systems into an interconnected grid. When originally conceived, the plant would provide a localized source of power, however by the 1940s the state had already begun interconnection. Further, fuel-fired steam plants were well established across California by 1941, that utilized proven technologies. The Grayson Power Plant as first constructed in 1941 represented the designs of the 1920s, this was soon realized as the plant underwent numerous upgrades and additions through the 1940s, 1950s, 1980s, 1970s, and 1980s to keep pace with the larger, semi-outdoor boiler types that proliferated across California in the 1950s and 1960s. Therefore, Grayson Power Plant is ineligible, under NRHP Criteria A, CRHR Criterion 1 and Glendale Register of Historic Resources as it is not associated with important events in national, state, or city history, or exemplifies significant contributions to the broad cultural, political, economic, social, or historic heritage of the nation, state, or city. Rather, the plant is a continuation of electrical generation themes in a city that had been using electricity for 32 years.

There is no evidence that Grayson Power Plant has any important association with any person or persons who made significant contributions to history at the local, state, or national level. It was designed to supplement and create a localized power source that involved several key institutions and individuals. Research did not reveal any notable figures specifically associated with the alignment or its related infrastructure, and research did not indicate the potential for significant associations in this regard. While the power plant is currently named Grayson Power Plant for L.W Grayson, a longtime Glendale employee. The name change, occurred in 1972, was in recognition of Grayson 19 years of service to the City. Grayson was important in management of the City but had no association with development, construction, or early operation of the plant. The power plant is recommended not eligible under NRHP Criteria B, CRHR Criterion 2 or for the Glendale Register of Historic Resources.

The subject property is not eligible for NRHP Criteria C, CRHR Criterion 3 nor the Glendale Register of Historic Resources. Grayson Power Plant when originally constructed as a small, two-unit boiler house with Streamline Moderne styling. Since originally constructed, the power plant main boiler building has undergone numerous additions and alterations. These additions, mimic Elliott's design but with each addition are farther removed from the original.

Daniel Anthony Elliott, is arguably a master architect with noteworthy designs focusing on water related infrastructure including the Colorado River Aqueduct Pumping Plants and F.E. Weymouth Memorial Water Softening and Filtration Plant completed in 1939 and later the Burbank Water & Power administrative building in 1949. The F.E. Weymouth Memorial Water Softening and Filtration Plant is the earliest extant example of Elliott's work, further it is the best example of monumental water and power architecture. Built in a Spanish Revival design, this building exemplifies the style, prominent of the time and best showcases Elliott's ability to make infrastructure into beautiful architecture. They original design of the Grayson Power Plant followed these design tenants. Elliott used prominent architectural styles on infrastructure. Elliott's design followed established power plant and substation design principles emblematic of the 1910s and 1920s. Power company architects designed substations and powerhouses in prominent public-building architectural styles like Beaux-Arts and Classical Revival. Urban power houses and substations housed the electrical equipment within buildings in order to accommodate the congested urban surroundings and to buffer the public from the sounds and activities associated with operation. The power plants and substations were constructed to meet both aesthetic and functional mandates (Frickstad 1916). Elliott's design of the Streamline Moderne power plant is a 1940s continuation of these design principles. Further, the 1941 building designed by Elliott has been manipulated and changed beyond his original vision through multiple building modifications. Further, the F.E. Weymouth Memorial Water Softening and Filtration Plant is far more intact example of his early designs.

An article noted its design as earthquake resistant meaning its generators were located outside on a concrete foundation that was resistant to earthquakes with metal coverings to protect it from weather. R.R. Martell, noted earthquake engineer consulted on the project stating the generator could be constructed outside the main boiler building. Through time the power plant has withstood earthquakes, as have other power plants with varied designs. This design is important in the greater advancement of power plant designs. Unfortunately, multiple additions and modifications have degraded its integrity and it can no longer convey this significance under NRHP Criteria C or CRHR Criterion 3. As noted before, the Glendale Register of Historic Resources does not assess integrity. The evolution of earthquake resistant power plant is important to the context of power plant design in California, however it's within the context of Glendale is lessened.

The property does not appear likely to yield significant informational associations under NRHP Criteria D, CRHR Criterion 4 or the Glendale Register of Historic Resources as the plant does not yield information important to archaeological pre-history or history of the nation, state, region, or city. In contrast, the extant archival record regarding the site presents a wealth of specific and informative material, including maps, photographs, aerials, and building permits that provides significant material for interpretation. Thus, the extant physical structures of the site do not convey significant informational material that would inform the rather robust archival record regarding the Grayson Power Plant.

The Grayson Power Plant was constructed approximately 60 years after the early development of the City of Glendale and 35 years after the City incorporated electricity in 1906. Due to this passage of time it is not associated with the early heritage of the City and not eligible for listing on the Glendale Register of Historic Resources.

While the Glendale Register of Historic Resources does not account for integrity, the NRHP and CRHR does. Due to numerous building additions and continued evolution of the property there has been a loss of integrity of design, materials, workmanship, and feeling. The property retains integrity of location, setting, and association. The power plant has not moved, the overall setting has remained industrial, and it maintains its association as a power plant. However, numerous alterations have removed its integrity of design to the original plant conceived by Elliott, materials as the building materials, while similar are different in type and massing from the original section. The plant has lost its association of workmanship as the additions have fundamentally altered the physical characteristics of the building as original constructed in 1941 and finally the plant has lost its original feeling. Aside from the numerous building additions continued addition of non-attached boiler units with modern cooling towers and ancillary buildings have removed the original feeling of the property. Therefore, the building has lost integrity coupled with lack of significance the building is not eligible for the NRHP or CRHR under any criterion.

~~While the Grayson Power Plant does possess potential significance under CRHR Criterion 1/Glendale Register of Historic Resources Criterion 1, CRHR Criterion 2/Glendale Register of Historic Resources Criterion 2, CRHR Criterion 3/Glendale Register of Historic Resources Criterion 3, and CRHR Criterion 4/Glendale Register of Historic Resources Criterion 4, a lack of integrity under all aspects of integrity recognized by the CRHR and applied to the City of Glendale Register of Historic Resources undermines the property's ability to convey significance and precludes it from listing on both the State and local registers. As developed in the historic context, the site was associated with significant advances in electrical generation and power in Los Angeles and the City of Glendale and was an early example of a modern power plant in Los Angeles County (Criterion1). The Grayson Power Plant also appears to be eligible under CRHR Criterion 2, because of its association with L.W. Grayson who managed the plant during the City of Glendale's population boom from 1951-1970 (Criterion 2). In addition, as designed the Plant was reflective of a cohesive operational and industrial design structure, with industrial operations characterizing the site (Criterion 3). In this regard, the historical attributes of the site have the potential to present important information regarding electrical generation and operations of the period (Criterion 4).~~

~~Despite this potential significance, a comprehensive lack of integrity precludes listing in the CRHR or Glendale Register of Historic Resources under any of the criteria. As documented in detail in the historic context, site analysis description and architectural description, the Grayson Power Plant site was systematically altered, dismantled, and demolished over time, with alteration, demolition, and abandonment of most major structures besides Cooling Tower #5 and several ancillary associated structures like a garage, warehouse, and parking sheds. While~~

~~remnant features of the original 1940s construction of the Plant remain, as a whole the site does not present a discernible entity that can convey significance. The remaining features do not present integrity of materials, workmanship, design, setting, feeling, or association and cannot illustrate any coherent significant facets of the original power plant, as described in detail below.~~

~~The Grayson Power Plant's role (purpose) as a municipal power generator for the City of Glendale has remained consistent over the years since its original construction. In that aspect, the continuity of use of the Plant for electricity influenced the history and growth of the City; however, under CRHR Criterion 1 (Glendale Register of Historic Resources Criterion 1), the remnant features of the Plant cannot convey distinctive themes relating to electrical transmission or development of the State, County, or City, or material or social conditions of the period. With the alterations, upgrades, demolition, and mothballing of features that reached the end of their useful lives and/or replaced by more efficient technologies for energy generation, the existing Plant structures cannot convey association to the early- to mid- twentieth century development or operation period during the period of significance (1941-1970). While the boiler building, boiler units, cooling towers, switching yard, and miscellaneous ancillary buildings remain on the site, their alterations and changes over the years have resulted in a loss of the original architectural design and character necessary to convey significance under this Criterion. Further, the development of modern infrastructure and modifications around the original structures severs it from any significant associations.~~

~~A lack of integrity under CRHR Criterion 2 (Glendale Register of Historic Resources Criterion 2) precludes the Grayson Power Plant from consideration in this regard. Although the Plant is associated with L.W. Grayson who managed it during the City's population, growth, and expansion boom from 1951-1970, a lack of material integrity of the buildings and structures at the Plant precludes discernable associations to L.W. Grayson.~~

~~The subject property cannot convey significant associations under CRHR Criterion 3 (Glendale Register of Historic Resources 3), as the material integrity of the property has been comprised by alteration, demolition, and new development. As discussed in detail in the historic context, site analysis description, and architectural description, the Grayson Power Plant was a cohesively designed site that included a number of integrated operational features (boiler building, boiler units, cooling towers, switching yards, etc.). As such, the historic design of the plant has the potential to convey significant engineering and engineering design elements associated with architect, Daniel Elliott. Elliott is well known for designing the Burbank Water & Power Company Building in 1949, whereas the Grayson Power Plant is a more functional, utilitarian site and is not a good example of Elliott's work (LA Conservancy 2015). The alteration and removal of many of the original site features undermines any ability to convey significance in this regard. As such, only a few remaining ancillary and supporting structures (Cooling Tower #5, garage, warehouse, and parking sheds) have the ability to convey significance under this Criterion. In addition, the Grayson Power Plant's materials and workmanship are common, mid-century building materials and therefore not unique.~~

~~The property does not appear likely to yield significant informational associations under CRHR Criterion 4 (Glendale Register of Historic Resources 4). The alteration and removal of many structures and buildings precludes informational insight into the construction or operational techniques of the plant. Additionally, ongoing site development has continuously disturbed the site. As such, neither the buildings and structures, nor the site represent an intact feature that has the potential to yield coherent historical information. In contrast, the extant archival record regarding the site presents a wealth of specific and informative material, including maps, photographs, aerials, and building permits that provides significant material for interpretation. Thus, the extant physical structures of the site do not convey significant informational material that would inform the rather robust archival record regarding the Grayson Power Plant.~~

~~The Grayson Power Plant was constructed approximately 60 years after the early development of the City of Glendale and 35 years after the City incorporated electricity in 1906, therefore, it is not associated with the early heritage of the City and not eligible for listing on the Glendale Register of Historic Resources Criterion 5.~~

8.0 SUMMARY OF FINDINGS

The City of Glendale Department of Water and Power plans to demolish the 1941 Grayson Power Plant Boiler Building with subsequent structures that include five cooling towers and units, as well as a generator between Cooling Tower 1 and 2, designated as Unit 8A, 8B, and 8C as part of a repowering project; Unit 9, built in 2003, will be the only resource on the site that will be retained.

The Grayson Power Plant was evaluated per NRHP under Criteria A, B, C, and D, the CRHR under Criterion 1, 2, 3, 4, and Glendale Register of Historic Resources and found not eligible for listing on any of the registers. For the purposes of Section 106 of the NHPA, CEQA and the Glendale Register of Historic Resources, the site is not eligible; therefore, no mitigation is required prior to or during project implementation. For a more in-depth discussion please see the DPR-523 in Appendix A of this report.

~~The Grayson Power Plant was evaluated per the CRHR and Glendale Register of Historic Resources and found not eligible for listing on the State or local registers under Criterions 1, 2, 3, 4, and Criterion 5 (Glendale Register of Historic Resources). For the purposes of CEQA and the Glendale Register of Historic Resources, the site is not eligible; therefore, no mitigation is required prior to or during project implementation.~~

9.0 REFERENCES

American Institute of Architects
1956 "E Architects." American Architects Directory.

Beck, Douglas Stephen and David Gordon Wilson
1996 Gas Turbine Regenerators Chapman & Hall

Burbank Water and Power
2015 "The History of Burbank Water and Power." Accessed November 19, 2015 at: https://www.burbankwaterandpower.com/the-history-of-burbank-water-and-power.

California Energy Commission
2014 "Database of California Power Plants." File date May 1, 2014. Accessed November 19, 2015: http://www.energyalmanac.ca.gov/powerplants/index.html.

2015 "List of Inactive/Retired Power Plants (1915-2004). Accessed on November 19, 2015: http://www.energyalmanac.ca.gov/electricity/inactive_plants.html.

California Office of Historic Preservation
1999 "California Register and National Register: A Comparison (for purposes of determining eligibility for the California Register)." Technical Assistance Series, No. 6. Sacramento: California Department of Parks and Recreation.

City of Glendale
1972 "Resolution in designating steam plant to L.W. Grayson." October 10, 1972.

2010 "Approval to Issue a Request for Proposals (RFP) for the Grayson Power Plant Unit No. 3 Cooling Tower Replacement." Report to the City Council. 28 September 2010. Accessed December 30, 2015 at: http://www.ci.glendale.ca.us/government/council_packets/Reports_092810/CC_5g_092810.pdf.

2011 "Approval to Issue a Request for Proposal (RFP) for the Grayson Power Plant Unit No. 4 Burner Management System and Boiler Control System Upgrade." Report to the City Council, February 11, 2011. Accessed December 30, 2015 at: http://www.ci.glendale.ca.us/government/council_packets/Reports_021511/CC_5a_021511.pdf.

2012a Popular Annual Financial Report. June 20, 2012. Accessed December 25, 2015 at: http://www.glendaleca.gov/home/showdocument?id=9653.

2012b "Overview of Glendale History." May 17, 2012. Accessed on December 25, 2015 at: http://www.ci.glendale.ca.us/history_overview.aspx.

2012c "How to Get Your Property Listed on the Glendale Register of Historic Resources." November 2012. Accessed 25 December 2015 at: http://www.glendaleca.gov/home/showdocument?id=12454.

2014 Glendale Register of Historic Resources. Updated February 2014. Accessed at: http://www.ci.glendale.ca.us/planning/HPGlendaleRegister.asp.

2014 "Specification No. 3541 to Provide Mechanical and Field Services for the Grayson Power Plant (GPP)." Report to the City Council. April 29, 2014. Accessed December 30, 2015 at: http://www.ci.glendale.ca.us/government/council_packets/Reports_042914/CC_5e_042914.pdf.

Coleman, Charles M.

1952 PG and E of California The Centennial Story of Pacific Gas and Electric Company 1852-1952, (New York: McGraw-Hill Book Company, Inc.

City of Pasadena

2015 "Pasadena Water and Power" Accessed on November 19, 2015: http://cityofpasadena.net/waterandpower/Our_History/.

Cook, Jack

1977 "Power Plant Director Keeps a Close Watch over Glendale's Lifeline." Daily News. Located at the City of Glendale's Central Library, Special Collection.

Cowan, Robert C.

1977 Ranchos of California a list of Spanish Concessions 1775-1822 and Mexican Grants 1822-1846. Los Angeles: Published by the Historical Society of Southern California.

Department of Energy

2015 "The War of the Currents: AC vs. DC Power." Accessed January 30, 2015, http://energy.gov/articles/war-currents-ac-vs-dc-power.

Environmental Data Resources, Inc. (EDR)

2015 EDR Aerial Photo Decade Package: Grayson Power Plant, 800 Air Way, Glendale, California. (Inquiry Number: 443851.9). October 13, 2015.

Fairchild Aerial Surveys, Inc.

1944 Los Angeles River Watershed: Ventura County Line to Irwindale Area. DDF-1944. 1:96,000

1971 South Los Angeles County; LA Basin, San Fernando Valley, and Santa Clarita Valley to Castaic Lake. TG-7600. 1:96,000.

Galvin Preservation Associates (GPA)

2007 City of Glendale Reconnaissance Survey and Historic Context Statement of Craftsman Style Architecture 2006-2007, Certified Local Government Grant. Prepared for the City of Glendale. October 2007

Glendale Public Service Commission

1951 Annual Report of the Public Service Commission. Report on file at the Glendale Public Service Commission.

Glendale Public Services Department

1974 "History." April 1974. Manuscript on File at the Glendale Public Service Department, Glendale, CA.

Glendale News-Press

1953a "Purchased Power—city Makes Own Energy Since 1941." November 13,1953, Page 7-C.

1953b "City to Glow—7-yar Light Program Starts." November 13,1953, Page 5-C.

1953c "More Demand for Energy Anticipated." November 23, 1953, Page 8-C.

1953d "New Unit Keeps Pace with Science—Third Turbine Uses More Heat, Pressure." November 13, 1953, Page 3-C.

1953e "Third Generating Unit—Plant set to Operate Next April." November 12, 1953.

1953f "Steam Plant Third Unit Completed—20,000 kilowatt hours more energy available."

1972 "Lauren Grayson, longtime city official, dies." May 22, 1972.

Hayes, Brian

2014 Infrastructure A Guide to the Industrial Landscape. W.W. Norton and Company.

Hubbard, Steve

2006 "Hydropower in California," Sacramento History Journal VI

JRP Historical Consulting Services

2000 "Water Conveyance Systems in California," California Department of Transportation Environmental Program/Cultural Studies Office.

LA Conservancy

2015 "Burbank Water & Power Company." Accessed on December 28, 2015 at: https://www.laconservancy.org/locations/burbank-water-and-power.

Los Angeles Almanac
2015 "General Population of the City of Los Angeles County, 1910–1950." Accessed at September 3, 2015: http://www.laalmanac.com/population/po26.htm.

Los Angeles Times
1940 "Power Plant Built in Open: Glendale Will have First Completed Quake-Proof Setup." June 30, 1940. Provided to Stantec from ProQuest Historical Newspapers by Greg Grammer of the Glendale Historical Society.

Mikailian, Arin
2015 "Plans Ordered to Redo Facility." Glendale News-Press, June 6, 2015.

Moskowitz, Gary
2004 "Glendale Gets Power Boost." Glendale News-Press, April 13, 2004.

National Park Service
2002 "Bulletin #15, How to Apply the National Register Criteria for Evaluation." Edited by Patrick W. Andrus and Rebecca H. Shrimpton. Washington D.C.: National Park Service, National Register Program. Accessed December 30, 2015 at: http://www.nps.gov/nr/publications/bulletins/nrb15/index.htm.

Nationwide Environmental Title Research, LLC (NETR Online)
2015 Historic Aerials from 2015-1952. Accessed on December 30 2015 at: www.historicaerials.com.

Perez, Cristotomo
1996 Land Grants in Alta California: A Compilation of Spanish and Mexican private land claims in the State of California. Rancho Cordova: Landmark Enterprises.

Perry, E. Caswell, and Carroll W. Parcher
1981 Glendale Area History. Second Edition. Glendale: Eric Schneirsohn, Xanadu Galleries. Pp. 59-61.

Ralph, Mason
1977 "City Installing New Generators." Burbank Ledger January 1, 1977.

Rees, Julie
1978 "Reclaimed Water Brings Power to the People." Glendale News-Press March 31, 1978.

Root, Garret and Rand Herbert
2013 From Sawdust to Uranium: The History of Electrical Power Generation in Humboldt County and Pacific Gas and electric Company's Humboldt Bay Power Plant 1883-2019. Pacific Gas and Electric Company.

Scholl Canyon Landfill
2015 "Scholl Canyon Landfill.." Accessed August 31, 2015: http://schollcanyonlandfill.org/#!clients/ServicesPage-bmmaq7o0.

Steele, I.C.
1950 "Steam Power Gains on Hydro in California," Civil Engineering (January 1950). Transmission Agency of Northern California.

2017 "California-Oregon Transmission Project," Accessed December 17, 2017. http://www.tanc.us/cotp.html

Spencer, R.W.

1961 "Cooling Water for Steam Electric Stations in Tidewater." Transactions of the American Society of Civil Engineers

Termuehlen, Heinz
2001 100 Years of Power Plant Development: Focus on Steam and Gas Turbines as Prime Movers. ASME Press.

URS Corporation (URS)
2003 City of Glendale Water & Power Grayson Unit 9 Project: Cultural Resources. Prepared for the City of Glendale. January 2003.

Vincent, Jr, W.G
1925 "The Interconnected Transmission System of California," Journal of Electricity LIV

Water and Power Associates
2015 "First Electricity in Los Angeles." Accessed November 19, 2015: http://waterandpower.org/museum/First%20Electricity%20in%20Los%20Angeles.html.

Watts, John T.
1954 "City Started Power Service in '09." Glendale News-Press. August 16, 1954.

Wells, Jason
2010 "Fire Breaks Out at Plant." Glendale News-Press July 16, 2010.

Williams, James C.
1997 Energy and the Making of Modern California. Akron, Ohio: University of Akron Press.

Yamada, Katherine
2008 "Power Plant Still Serves the City Well." Glendale News-Press November 21, 2008.

APPENDICES

Appendix A UPDATED CALIFORNIA DEPARTMENT OF PARKS AND RECREATION DPR (523) SITE RECORD FORM

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings _____
Review Code _____ Reviewer _____ Date

***Resource Name or #:** (Assigned by recorder) Grayson Power Plant

P1. Other Identifier: _____

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County** Los Angeles

and (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad Burbank, CA

Date 2015 **T** 1N; **R** 13W **Sec** 7 S.B. **B.M.**

c. Address 800 Air Way City Glendale Zip 91201

d. UTM: (Give more than one for large and/or linear resources) Zone, 10S 382154 mE/ 3780132 mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, decimal degrees, etc., as appropriate)

From downtown Glendale, travel 2.3 miles west on Elk Avenue to San Fernando Road, proceed northwest of 2.8 miles on San Fernando Road to Flower Street. Travel southwest on Flower Street to Air Way, the power plant is located on Air Way at the convergence of the Los Angeles River and Fairmont Avenue. APN: 5593-003-906.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Glendale Water and Power's Grayson Power Plant is a steam electric power plant located in Glendale, CA. The approximately 11-acre property is bounded by Union Pacific Railroad tracks and San Fernando Road to the northeast, Fairmont Avenue to the southwest, south, and southeast. The property contains numerous elements of power generating infrastructure including a boiler building with nine boilers, generators, five cooling towers, two switch yards, and multiple auxiliary buildings amounting to approximately 17 permanent buildings and structures (**Photograph 1**) (see Continuation Sheet).

***P3b.Resource Attributes:** (List attributes and codes) HP8 – Industrial Building, HP11 – Engineering Feature

***P4. Resources Present:** ☒ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo: (view, date, accession #)
Photograph 1: Grayson Power Plant, camera facing southwest, August 17, 2015.

***P6. Date Constructed/Age and Source:**
☒ Historic ☐ Prehistoric ☐ Both
1941, Glendale Water and Power

***P7. Owner and Address:**
City of Glendale, Glendale Water and Power
800 Air Way
Glendale, CA 91201

***P8. Recorded by:** (Name, affiliation, and address)
Meagan Kersten and John Terry
Stantec, Inc.
555 Capitol Avenue, Suite 650
Sacramento, CA 95814

***P9. Date Recorded:** August 17, 2015

***P10. Survey Type:** (Describe) Intensive

***P11. Report Citation**: (Cite survey report and other sources, or enter "none.")
Historic Resource Inventory and Evaluation Report, Grayson Power Plant, Glendale, CA, Stantec, 2015 (Revised 2017)

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** (Assigned by recorder) Grayson Power Plant ***NRHP Status Code** 6Z

B1. Historic Name: Glendale Public Service Department, Steam Electric Generating Plant

B2. Common Name: Grayson Power Plant

B3. Original Use: Power Plant B4. Present Use: Power Plant

***B5. Architectural Style:** Streamline Moderne

***B6. Construction History:** (Construction date, alterations, and date of alterations) Grayson Power Plant was constructed in 1941 with additions added to the main boiler building in 1952, 1963, 1972, and 1977. The site has continuously evolved as technology changed and more units were brought online (see detailed history below)

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** _____ **Original Location:** _____

***B8. Related Features:** none

B9a. Architect: Daniel A. Elliott b. Builder: Glendale Public Service Department

***B10. Significance: Theme** n/a **Area** n/a

Period of Significance n/a **Property Type** n/a **Applicable Criteria** n/a (Discuss importance in terms of historical or architectural

This intensive level survey and evaluation finds that Grayson Power Plant, while significant, lacks integrity to convey this significance for listing in the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR) or Glendale Register of Historic Resources (GRHR). The property has been evaluated in accordance with Section 15064.5(a)(2)-(3) of the California Environmental Quality Act Guidelines (CEQA), using the criteria outlined in Section 5024.1 of the California Public Resources Code and does not appear to be a historical resource for the purpose of CEQA (see continuation sheet).

B11. Additional Resource Attributes: (List attributes and codes) _____

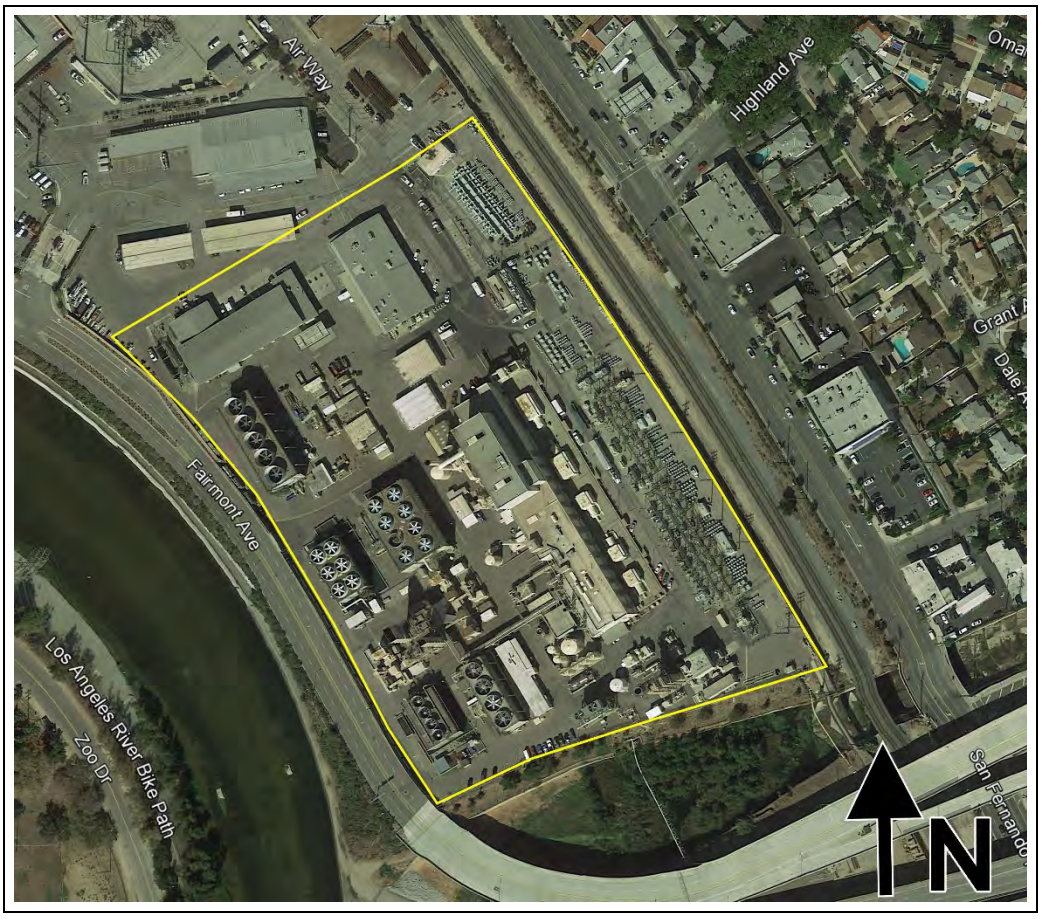
***B12. References:** See footnotes

B13. Remarks:

***B14. Evaluator:** Corri Jimenez and Garret Root, Stantec Inc.

***Date of Evaluation:** December 2015 and December 2017

This space reserved for official comments.



P3a. Description (Continued):

Grayson Power Plant's boiler building faces southeast, on a northwest-southeast axis and massing is predominantly rectangular divided into three levels and each elevation asymmetrical (**Photograph 2** and **3**). Architecturally, the boiler building is 2-3-stories high and is framed with structural steel set on a poured concrete pier foundation (**Photograph 4**). The lower floor extends up a floor level on a poured concrete structure with a steel-framed superstructure set on top of the concrete walls; a second steel-framed structure is set on the northwest corner, which houses Unit 3. Streamline Moderne character-defining details are evident as linear lines in the cementitious paneling, illuminating stringcourses on the building's upper southeast corner addition, added during a 1953 expansion to building for Unit #3.

The building has a flat roof with metal coping at the top. The exterior of the building is clad with multiple building materials that include horizontal asbestos siding and horizontal metal sheathing that are bolted to the steel framing. The cementitious siding are visible on the interior of the building as well. A Streamline Moderne style-rolling directional crane, which services the boilers, turbines, and generators, is located on the northeast elevation. Each of the five turbines is covered with a Streamline Moderne enclosure (**Photograph 5**). Copper box lettering in the same style are located on the corner and state: "CITY OF GLENDALE/PUBLIC SERVICE DEPARTMENT/STEAM ELECTRIC GENERATING PLANT" (see Figure 20-21). The northeast elevation of the building has a dock with boilers and equipment located on the northwest elevation (**Photograph 6**). The northwest elevation is where all the mechanical equipment and numerous boiler stacks for Boilers 1, 2, and 3. New equipment is evident for Boiler Unit #3 on the northwest corner.

Multiple openings punctuate the elevations of the boiler building on all elevations. The boiler building retains its original windows, which include structural glass blocks on the northeast elevation and metal-framed industrial awning windows on the southeast elevation (**Photograph 7**). Currently the building houses six boilers and is centrally located near the control room. The interior of the building is open with a catwalk or mezzanine floor of metal grating constructed on the west wall in operating the power equipment that include the boilers above and turbines, which attached to the concrete floor platforms. The corresponding boiler stacks and scrubbers are located on the exterior of building along the west wall (**Photograph 8**).

The Grayson Power Plant had eleven boiler units with seven intact. Units 1 and 2 are located within the boiler building and have been mothballed. Units 3, 4, and 5 are located along the southwest elevation of the boiler building. Units 6 and 7, built between 1972-1974, have since been demolished. Units 8A, 8B, and 8C, were constructed in 1977 and Unit 9, built in 2003. Units 1 through 4 are housed in the main boiler building with additions. Structures 8A, 8B, 8C, and 9 are located within utilitarian metal structures (**Photograph 9** and **10**).

Located west of Grayson Power Plant's boiler units are five cooling towers. Each cooling tower correlates to one boiler. The cooling towers consists of a sub grade water tank is enclosed by two-to-three-foot-thick concrete walls. Each cooling unit has a series of vent stacks. Cooling Towers 1 and 2 are designed with four stacks, which has splayed concrete sidewalls, while Cooling Tower 3 is constructed with six stacks, Cooling Tower 4 has eight stacks, and Cooling Tower 5 with five stacks (**Photograph 12, 13,** and **14**). Additional features of the cooling towers include a louvered wall, which provides air circulation to cool the water from the boilers and wooden roof decks. There are two switching yards, east of the boiler building and are labeled as Kellogg and the Glendale switching yards. The yards are not historic and are not part of this inventory. Five miscellaneous utilitarian buildings are located on the property northwest of the boiler building. These buildings were not inventoried or evaluated as part of this study.

B10. Significance (Continued):

Historic Context

The Glendale Public Service Department steam electric generation plant, renamed Grayson Power Plant in 1972, was constructed in Glendale in 1941, Since construction the power plant has undergone numerous alterations and expansions. The Streamline Moderne boiler building has more than tripled in size since originally conceived by architect Daniel A. Elliott. Fuel fired steam electric units have been common power generators in California since the 1920s. The design and power output changed dramatically by the end of World War II as municipalities and utilities moved towards semi-outdoor fuel fired steam plant. This reduction in building material cost drove exponential growth in the post-war years, becoming common fixtures across California. The Grayson Power Plant represents a transition in fuel fired power plant design that is more associative with the early 1920s designs rather than the more prominent post-war designs.

Electricity in California

California's growth in the first half of the twentieth century was due in part to the development of ambitious hydroelectric systems. Long-distance transmission lines linked the power generating mountainous regions with valley farms, coastal centers, and distant cities, allowing a pace and scale of development that was previously unimaginable. By the 1920s, this intricate system of hydroelectric facilities, coupled with a growing number of fuel-fired steam plants, fed into long distance transmission lines and a series of substations that transferred and distributed power to locations throughout the state for widespread public use (Root and Herbert 2013: 1; Department of Energy 2015). Within this burgeoning energy context, the long-distance transmission lines were of vital importance, serving as the nexus between the state's abundant hydro supplies and the distant urban and agricultural markets. The technological advancement and development of transmission technology enabled greater and greater supplies of readily available energy, occurring with striking rapidity during the period (Root and Herbert 2013: 1-2).

In the late nineteenth century and into the twentieth, electrical transmission covered small distances, typically limited to tens of miles. During this period, the technological debate raged between two key concepts: Direct Current (DC), championed by General Electric and Thomas Edison, and Alternating Current (AC), championed by Westinghouse and electrical engineer Nikola Tesla (Department of Energy 2015; Williams 1997: 90). The critical limitation to DC was its inability to be transmitted over great distances, as the current could not be converted to higher and lower voltages and rapidly lost energy along any distances. In contrast, Tesla's AC stepped up voltage for transmission and stepped down voltages for local distribution, creating a system that avoided the energy seepage of DC. Ultimately, Tesla's vision of AC prevailed and soon transmission lines could carry more power over greater distances, a development that undergirded much of the state and nation's early twentieth century growth. Rapid innovation during the first decades of the twentieth century allowed for increasingly higher voltages, with heavier insulators, multi-phase lines, and other mechanical methods adapted to carry greater supplies more efficiently, following the adoption of AC. By the early-1910s, California's hydroelectric industry was carrying hundreds of kV of electrical power over hundreds of miles (**Figure 1**) (Root and Herbert 2013: 1-3; Hayes 2014: 237-270).

In the 1880s, hydroelectric plants provided small-scale electrical development to only isolated companies, such as Standard Consolidated Mining Company in Bodie, CA and other localized concerns (Hubbard 2006).

However, by the early 1890s AC technological advancement allowed for a more effective means of transmitting electricity over ever-increasing distances. At the outset of this development, the San Antonio Light and Power Company constructed a 13 mile, 5,000-volt, transmission line in 1892, with PG&E constructing the Folsom Hydroelectric Plant's 22 mile, 11,000-volt transmission line in 1895 (Coleman 1952: 138-140). These distances soon gave way to ever larger transmission capability, with Pacific Light and Power Company's Big Creek Hydroelectric Project running at 150 kV by 1913. Several small companies began constructing independent and local power plants a transmission systems (JRP 2004).

Figure 1. A 1925 map depicting the growth of the transmission system (Vincent 1925).

Rise of Fuel-Fired Steam Electric

British designer Sir Charles Parsons built the first steam turbine-generator in 1884. At the beginning of the twentieth century, engineers designed steam turbines to replace the aging steam engine power plants. Aegidius Elling of Norway is credited in 1903-1904 as being the first to apply the method of injecting steam into the combustion chambers of a gas turbine engine (Termuehlen 2001: 11, 21-28; Beck and Wilson 1996: 30). The greater Los Angeles region had multiple examples of early fuel fired steam plants including the Banning Street Electrical Plant in Los Angles completed in 1883, Los Angeles Steam Plant No. 1 constructed in 1896, Pacific Light and Power Company's steam plant in Redondo Beach was completed in 1902 and the Glenram Power Plant constructed in Pasadena in 1906 (Water and Power Associates 2017; City of Pasadena 2015). Within a relatively short time, the technology and capacity of these engines to supply power and electricity grew exponentially. These advances brought electricity to a wide range of industrial and domestic applications; however, the materials needed to withstand the high temperatures of modern turbines were not yet available. Improvements in steam turbines advanced throughout the 1920s and 1930s, leading to a generation of more efficient turbine power plants in the 1950s. During this time, utilities closed or replaced many of the older steam-electric plant generators and constructed more modern units (Myers 1984: 8).

Steam power generation was part of California's power production throughout the twentieth century, though it declined considerably in the period leading up to World War II as large hydroelectric generating plants came online throughout the state. As early as 1920, hydroelectric power accounted for 69% of all electrical power generated. In 1930, that figure had risen to 76%, and by 1940 hydroelectric sources provided 89% of California's electricity. After World War II this trend reversed and construction of steam-powered electric generating units grew, accounting for most of the new construction. By 1950, hydroelectricity accounted for only 59% of the total power generated, falling to 27% in 1960. Some new hydroelectric plants were built during the 1960s, chiefly associated with federal and state water projects, but by 1970, hydroelectric plants accounted for only 31% of all electricity generated in California. A combination of drought, discovery and tapping of natural gas, and lack of new hydroelectric sites led to its decline (Williams 1997: 374).

A persistent drought in California caused the major utilities to question the reliability of systems dependent on abundant water flows, like hydroelectricity. This drought began in 1924 and continued, on and off, for a decade. Concurrently, in the 1920s new natural gas discoveries were made and provided both Northern and Southern California with ample fuel for steam electric power generation. The confluence of these various factors – drought, new steam generator technologies, and new supplies of natural gas – prompted California utilities to begin constructing large steam plants. Steam plants built across the state shared design characteristics including locations close to load centers to reduce transmission costs, easy and efficient access to fuel supplies, near a water supply, on inexpensive land, and on geological formations that could provide a good foundation (Steele 1950: 17-21). By 1920, the cities of Burbank, Pasadena, Los Angeles, and Glendale restructured their original charters to allow municipality owned power generation facilities and distribution lines (Williams 1997:261; Water and Power Associates 2015; Electrical West 1929). In 1928, LA Gas and Electric Corporation constructed the Seal Bach Power Plant and PG&E constructed Station C in Oakland. In 1929, Great Western Power Company built a large steam plant on San Francisco Bay, near the Hunters Point shipyard, fitted with two 55 MW generators. In 1930, fuel-fired steam power plant accounted for more than

half of all new plants under construction in California. The fuel-fired steam generation capacity jumped from 1924 at 407,000 kW to over 1 million kW a mere six years later. (Williams 1997: 279-280; City of Pasadena 2015; Burbank Water & Power 2015; Water and Power Associates 2017; Spencer 1961). These factors prompted many municipalities, like Glendale to construct power plants of their own.

Early Glendale History

By the turn of the twentieth century, Glendale had already experienced rapid growth resulting, in part, from the promotional efforts of Edgar D. Goode and Dr. D. W. Hunt and their Glendale Improvement Society in 1902 (City of Glendale 2012a). The growth continued with the opening of the Pacific Electric Railroad in 1904, connecting Glendale to Los Angeles (City of Glendale 2012a). Glendale incorporated in 1906 and by 1910 had a population of 2,742 residents (Glendale News-Press 1953c; Los Angeles Almanac 2015). Power generation in the City of Glendale began in earnest early when the citizens voted in favor of a $60,000 bond to create the Glendale Public Service Division that purchased the Glendale Light & Power Company generating facility in 1909. By 1910, the system was already strained as power output was a mere 107,000 kilowatts. To supplement, the city purchased additional electricity from Pacific Power & Light, now part of the Southern California Edison Company (Glendale Public Service Commission 1951).

By 1920, Glendale began annexing neighboring communities boasting the city's population to over 13,000 residents (City of Glendale 2012b; Los Angeles Almanac 2015). From 1930 to 1952, Glendale added Whiting Woods and Verdugo Mountains to their city limits a total of 23.6 square miles; two major annexations included New York Avenue (in the La Crescenta area) and Upper Chevy Chase Canyon, and several smaller annexations, which enlarged the city to 29.2 square miles by 1952. By 1950 the population was over 95,700 residents and was considered at the time to be "the fastest growing city in America" (City of Glendale 2012b; Los Angeles Almanac 2015). However, by the late 1930s the Glendale Public Service Commission, Electric Division could not keep pace with the population increases (Glendale Public Service Commission 1951). Prior to 1937, Glendale purchased their power from Southern California Edison Company. This supply was supplemented with completion Hoover Dam however, continued growth indicated another plant would be necessary to supplement demand [Glendale News-Press 1953a; Glendale Public Services Department 1974).

Glendale Steam Electric Generating Plant

Building off the success of the 1920s and early-1930s and seeing the impending probability of an outbreak of hostilities, utilities and municipalities began constructing a series of fuel-fired steam plants across California. Northern California PG&E began construction of three, fuel-fired steam -plants located adjacent to oil refineries, in 1939. Southern California municipalities, in Burbank, Glendale (study property), and San Diego each completed power plants, in 1941 (Williams 1997: 279-280). The City of Glendale began planning for construction of a new power plant in 1937. However, the city's plans were met with immediate opposition by Los Angeles Bureau of Power and Light and the Southern California Edison Company, both which supplied the city with electricity and claimed had surplus electricity which could be sold to the city (Los Angeles Times 1938). Despite these assertions, the city, led by industrial entities pushed forward with their plan for construction of a $1.8 million-dollar plant. The City secured the services of Architect Daniel A. Elliott to design the power plant, referred as the "Glendale Power & Light" or "Steam Electric Generating Plant" (**Figure 2**) (LA Conservancy 2015).

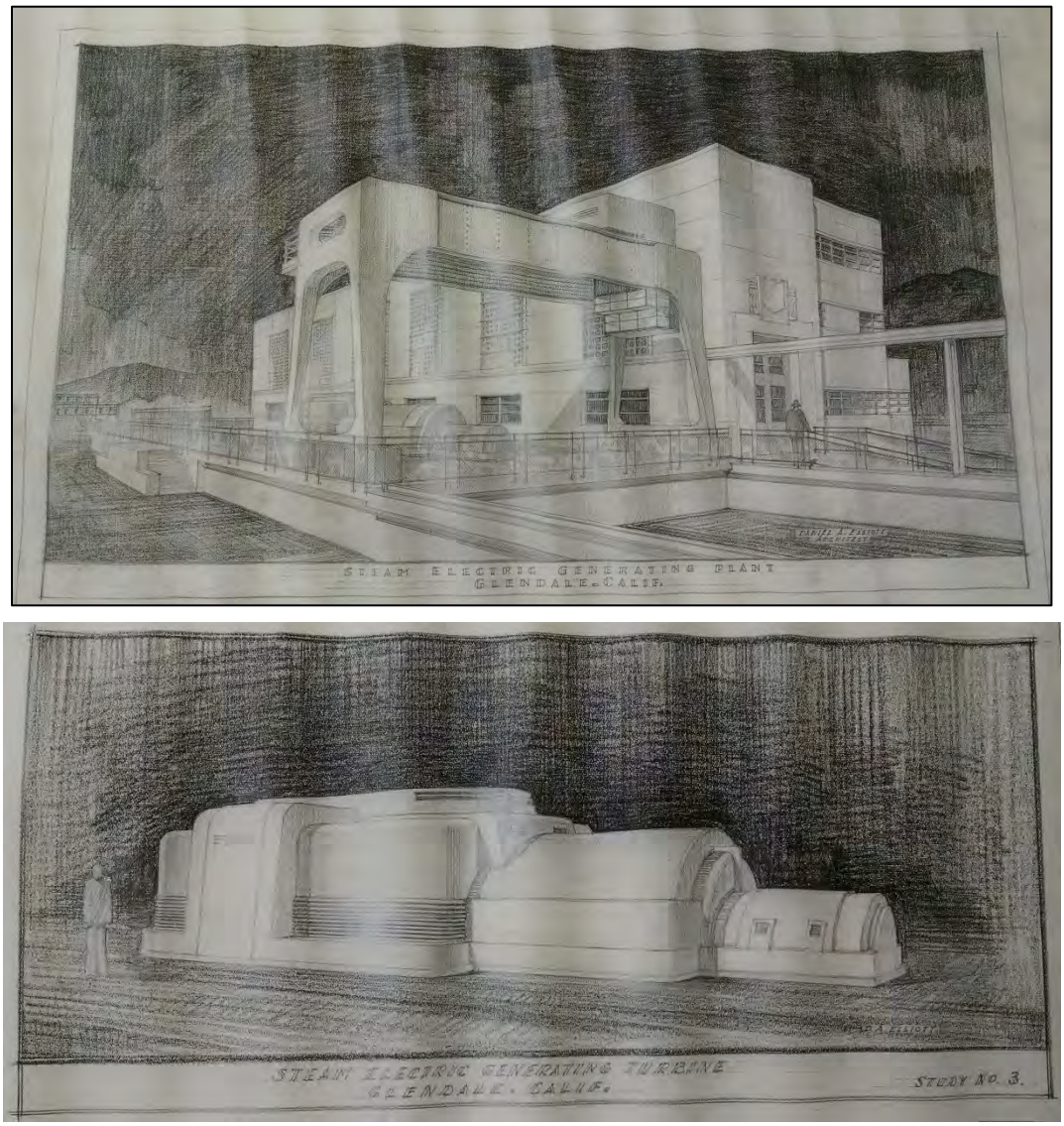


Figure 2. Original Daniel Elliott renderings show the exaggerated streamline moderne details, much of which did not make it onto the building.

Elliott designed the boiler structure in the Streamline Moderne-style, built to house two boilers (Boilers 1A and 1B). Located outside on a full length concrete pedestal were the generators, manufactured by Combustion Engineering Company Inc., New York and with Streamline Moderne detailing. Elliott was born in Las Vegas, New Mexico in 1898. He attended University of California at Berkley, earning an architecture degree in 1925. From 1925 through 1932 he served as a designer at the Los Angeles architecture firm of Gilbert Stanley Underwood before getting his architecture license and becoming an architect at the Metropolitan Water District of Southern California. He remained at the water district from 1932 through 1939. During World War II he worked at Hoover and Montgomery, a firm that specialized in water-related construction projects. Following the end of the war he formed his own architecture practice, one he

maintained until his retirement in 1962. Principle examples of his work are water focused designs most notably the Colorado River Aqueduct Pumping Plants and F.E. Weymouth Memorial Water Softening and Filtration Plant completed in 1939 (**Figure 3**) and the Burbank Water & Power administrative building in 1949 (LA Conservancy 2015; AIA 1956: 155).

Elliott's original design laid claim to being the world's first earthquake-proof plant, with a 22 foot deep concrete basement, turbo-generator on an uncovered open deck with a metal covering over the generator from to protect from inclement weather, and a building shell built of light steel and stucco filler walls (Los Angeles Times 1940). At its start-up in 1941, the plant produced 20,000 kilowatts of power. The city had already secured funding for a second unit set to be added in 1945 (Lost Angeles Times 1941; Glendale Public Service Commission 1951). To meet increasing demands for electricity, a second unit was added in 1947, which included an additional 20,000-kilowatt generator and single boiler increasing the plant's combined kilowatt capacity of 40,000 kilowatts (Glendale News Press 1953e; Glendale News Press 1953f; and Glendale Public Service Commission 1951).

Figure 3. Top, the 1939 Metropolitan Water District of Southern California Water Softening Plant in La Verne and below the Burbank Water Light and Power Administration building built in 1949.

As demand increased a third unit were added in 1953, which constituted the first of several additions to the boiler building on its north end; the third unit at the plant was completed at a cost of over $3 million. The integral furnace boiler and superheater steam boiler was manufactured by the Babcock & Wilcox Company and the turbine generator by General Electric. The company of Foster & Wheeler constructed the cooling tower and provided the condenser for Unit 3. Unit 3 also utilized the most up-to date engineering replicated in fuel-fired plants across California. The turbine for Unit 3 is located outside the main building under a removable housing (Glendale News Press 1953e).

California utility companies' steam generating capacity expanded during the period of 1950 through 1970. PG&E operated 15 steam electric plants in 1950. Conversely, Southern California utilities built large steam plants at a much slower rate than with Northern California, constructing the Valley Steam Plant in 1953 and Scattergood Steam Plant in 1957. By the late 1970s, there were more than 20 fossil fuel steam-generating plants in California owned by various power companies and clustered near urban areas such as San Francisco Bay, the greater Los Angeles area, San Diego County, along with a few interior plants in San Bernardino, Riverside, and Imperial Counties. Happening concurrently, in the mid-1960s large scale intertie projects such as the 500 kV California Oregon Intertie (also known as Path 66) were completed. Additionally, utility companies began to pool their resources, creating a larger interconnected grid. Dictated by Federal power policy, utility companies came together to form bulk transmission entities. In 1967, the Western Systems Coordinating Council formed, consisting of 40 power systems located in western states and remained in existence until 2002 when it merged with three regional transmission associations forming the Western System Coordinating Council (WSCC). In addition to WSCC in the mid-1960s was the California Power Pool. This entity gave rise to the current California Independent Service Operator (CAISO). These large intertie projects brought the death of independent, locally sourced electricity as CAISO and its predecessors controlled operation of the various plants (Transmission Agency of Northern California 2017; Water and Power Associates 2017); Southwest Builder and Contractor 1962).

Between 1953-54, the plant generated a total of 122,649,440 kilowatts per hour, supplemented by electricity generated at Hoover Dam, supplied all the power needed for the City (Glendale Public Service Commission 1951). Five more units were constructed after 1953 including Unit 4 (1959), Unit 5 (1964), Unit 6 (1972), and Unit 7 (1974). The boiler for Unit 4 was manufactured by Riley Stoker Corporation; Unit 6 was manufactured by General Electric; and Unit 7 by the Curtiss-Wright Company. Units 1 through 3 maintain Elliott's the style aesthetics, however the structure shape and detailing shifts with the addition of Units 4 & Unit 5, to a significantly taller, less detailed utilitarian structure that we see to the north. As the building was expanded north, lower level fenestration of the first three phases was repeated but without the vertical glass block panels. Little significant architectural detail was included in Unit 4 & Unit 5's building expansion. In 1972 The plant was renamed the "L.W. Grayson Steam-Electric Generating Station" after the City of Glendale General Manager and Chief Engineer, Lauren W. (L.W.) Grayson who at the time was the longest serving employee. Grayson accepted a position at the City of Glendale in 1951 (City of Glendale 1972; Glendale News-Press 1972). His most notable achievement was in bringing power to Southern California through the Pacific Northwest Intertie (Glendale News-Press 1972).

Unit 8 (Unit 8A, 8B, and 8C) was constructed in 1977 and was one of the last to be installed at the power plant and the most efficient of the group while producing fewer emissions than the earlier generators at the plant (Cook 1977). Initially, it was called a "combined cycle repowering unit" in producing more energy and fewer emissions with conventional units that provide better combustion controls and higher efficiency

(Cook 1977). The new system cost $20 million dollars and at the time, lessened air pollution (Ralph 1977). Further environmental improvements to the plant resulted from the construction of a phosphate removal and treatment plant in 1978. The treatment plant was connected to the steam plant by a pipeline, which directly pumps the reclaimed water into the Grayson Power Plant's cooling towers (Rees 1978). In addition, since 1994 the plant has utilized methane gas from the Scholl Canyon Landfill mixed with natural gas to generate power in Units 3, 4, and 5 (Scholl Canyon Landfill 2015).

Continuous improvements in efficiency and power generation capacity have been one of the priorities at the Grayson Power Plant throughout its history including the construction of a new 50 megawatt power generator was completed in 2004, at a cost of $33.5 million dollars, replaced two of the older, outdated units. The new structure consists of a generator, a gas turbine and compressor, and an emissions control tower to filter out pollutants throughout the system. The generator runs entirely on computers and operates during peak hours (Moskowitz 2004).

In July 2010, a fire at Cooling Tower 3 caused severe damage to the structure, although service was not effected (Wells 2010). Repairs to other portions of the plant included the replacement of the superheater tubes in Boiler No. 4 in 2001, wall tubes in Boiler No. 4 in 2011, an upgrade of the burner management and boiler control systems, also in Unit 4 in 2011, among other updates (City of Glendale 2011). According to the City of Glendale, California Report to the City Council in April 2014, the boilers for Units 1 and 2 have been mothballed (City of Glendale 2014). In 2015, the Glendale City Council commissioned plans to upgrade Grayson Power Plant to make the plant more efficient, reliable and cost effective. According to the June article in the Glendale News-Press, seven of the eight turbines would be decommissioned and replaced by 4 more efficient turbines, which would be able to produce power more quickly (Mikailian 2015). Currently the power plant generates approximately 18% of the power needed for the City of Glendale with the remaining power coming from a combination of both local and remote generation (owned and leased), coupled with spot market purchases from a variety of suppliers throughout the Western United States (Mikailian 2015).

Evaluation

Glendale's Grayson Power Plant served as a regional power source since construction. While the power plant has maintained this role, it has not directly contributed to the early growth of the city, further it only supplemented electricity supplied by other utilities and by the 1937 constructed Hoover Dam. The power plant did supply the region with localized power, however, it is just a continuation of existing power supplies. By the time the power plant came online, in 1941, the city had been electrified for 32 years. Further, articles exaggerated the need for a localized power plant to sustain growth. Supply was high, the city, understandably preferred control of their own power supply. California, like much of the west had begun interconnection a series of previously independent transmission systems into an interconnected grid. When originally conceived, the plant would provide a localized source of power, however by the 1940s the state had already begun interconnection. Further, fuel-fired steam plants were well established across California by 1941, that utilized proven technologies. The Grayson Power Plant as first constructed in 1941 represented the designs of the 1920s, this was soon realized as the plant underwent numerous upgrades and additions through the 1940s, 1950s, 1980s, 1970s, and 1980s to keep pace with the larger, semi-outdoor boiler types that proliferated across California in the 1950s and 1960s. Therefore, Grayson Power Plant is ineligible, under NRHP Criteria A, CRHR Criterion 1 and GRHR as it is not associated with important events in national,

state, or city history, or exemplifies significant contributions to the broad cultural, political, economic, social, or historic heritage of the nation, state, or city. Rather, the plant is a continuation of electrical generation themes in a city that had been using electricity for 32 years.

There is no evidence that Grayson Power Plant has any important association with any person or persons who made significant contributions to history at the local, state, or national level. It was designed to supplement and create a localized power source that involved several key institutions and individuals. Research did not reveal any notable figures specifically associated with the alignment or its related infrastructure, and research did not indicate the potential for significant associations in this regard. While the power plant is currently named Grayson Power Plant for L.W Grayson, a longtime Glendale employee. The name change, occurred in 1972, was in recognition of Grayson 19 years of service to the city. Grayson was important in management of the city but had no association with development, construction, or early operation of the plant. The power plant is not eligible under NRHP Criteria B, CRHR Criterion 2 or for the GRHR.

The subject property is not eligible for NRHP Criteria C, CRHR Criterion 3 nor the GRHR. Grayson Power Plant when originally constructed as a small, two-unit boiler house with Streamline Moderene styling. Since originally constructed, the power plant main boiler building has undergone numerous additions and alterations. These additions, mimic Elliott's design but with each addition are farther removed from the original (**Figure 4** and **5**).

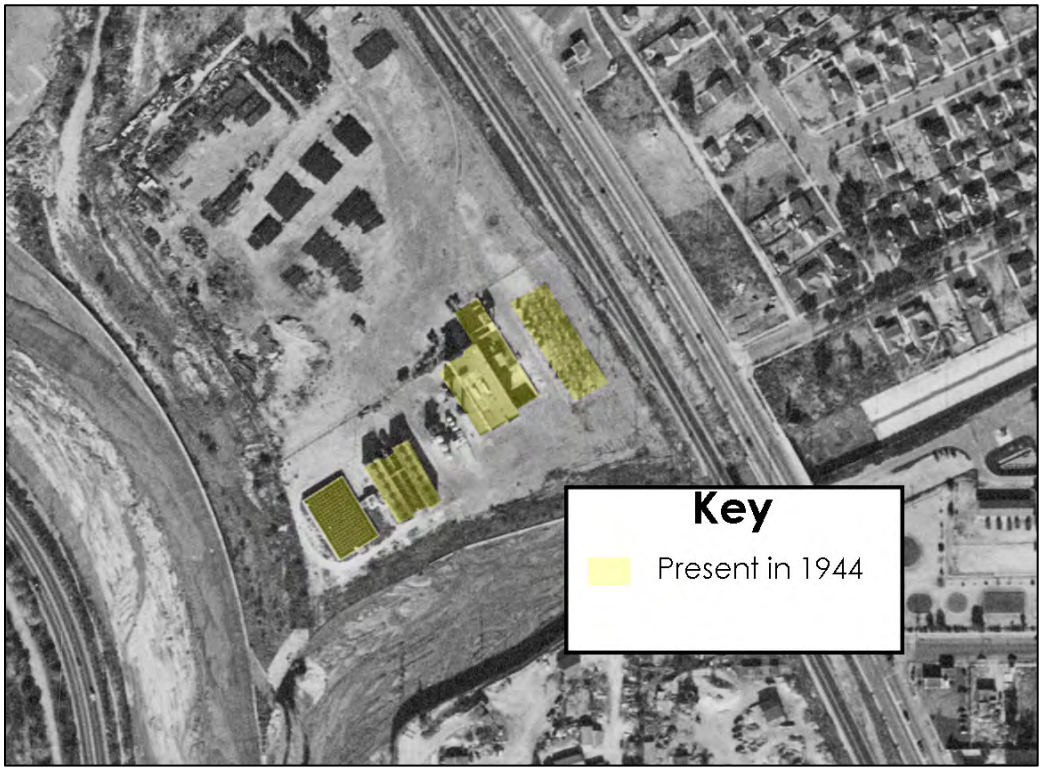


Figure 4. Glendale Steam Electric Power Plant Property in 1944.

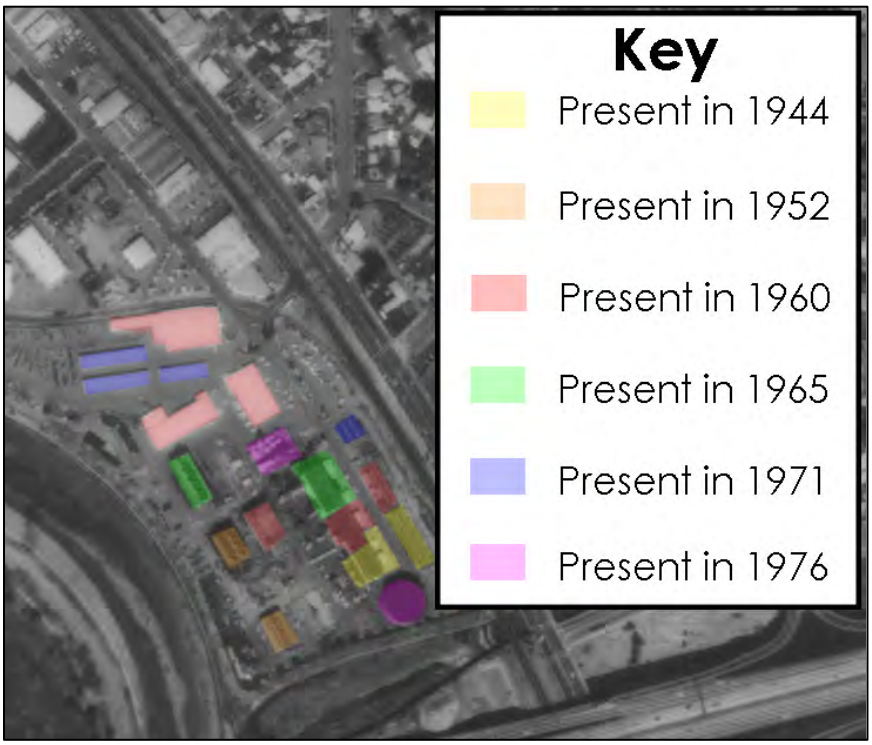


Figure 5. A graphic showing the numerous plant modifications since construction in 1941. The information is overlaid on a 1976 aerial with changes noted on historic aerials in 1944, 195, 1960, 1965,1971, and 1976.

Daniel Anthony Elliott, who is arguably a master architect. His noteworthy designs focus on water related infrastructure including the Colorado River Aqueduct Pumping Plants and F.E. Weymouth Memorial Water Softening and Filtration Plant completed in 1939 (**Figure 3,** above) and later the Burbank Water & Power administrative building in 1949. The F.E. Weymouth Memorial Water Softening and Filtration Plant is the earliest extant example of Elliott's work, further it is the best example of monumental water and power architecture. Built in a Spanish Revival design, this building exemplifies the style, prominent of the time and best showcases Elliott's ability to make infrastructure into beautiful architecture. They original design of the Grayson Power Plant followed these design tenants. Elliott used prominent architectural styles on infrastructure. Elliott's design followed established power plant and substation design principles emblematic of the 1910s and 1920s. Power company architects designed substations and powerhouses in prominent public-building architectural styles like Beaux-Arts and Classical Revival. Urban power houses and substations housed the electrical equipment within buildings in order to accommodate the congested urban surroundings and to buffer the public from the sounds and activities associated with operation. The power plants and substations were constructed to meet both aesthetic and functional mandates (Frickstad 1916). Elliott's design of the Streamline Moderne power plant is a 1940s continuation of these design principles. Further, the 1941 building designed by Elliott has been manipulated and changed beyond his original vision through multiple building modifications. Further, the F.E. Weymouth Memorial Water Softening and Filtration Plant is far more intact example of his early designs.

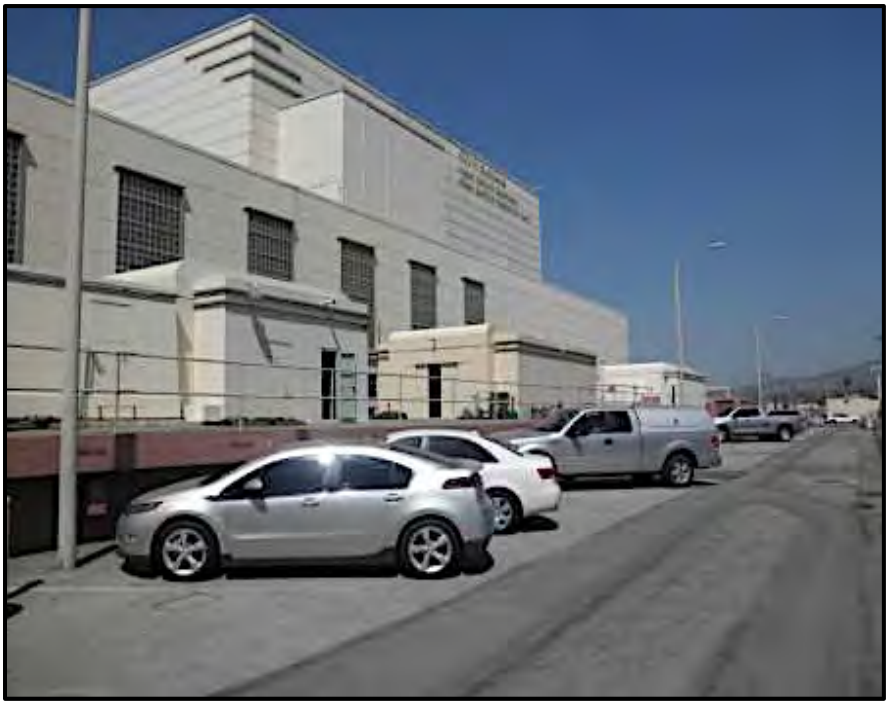
An article noted its design as earthquake resistant meaning its generators were located outside on a concrete foundation that was resistant to earthquakes with metal coverings to protect it from weather. R.R. Martell, noted earthquake engineer consulted on the project stating the generator could be constructed outside the main boiler building. Through time the power plant has withstood earthquakes, as have other power plants with varied designs. This design is important in the greater advancement of power plant designs. Unfortunately, multiple additions and modifications have degraded its integrity and it can no longer convey this significance under NRHP Criteria C or CRHR Criterion 3. As noted before, the GRHR does not assess integrity. The evolution of earthquake resistant power plant is important to the context of power plant design in California, however it's within the context of Glendale is lessened.

The property does not appear likely to yield significant informational associations under NRHP Criteria D, CRHR Criterion 4 or the GRHR as the plant does not yield information important to archaeological pre-history or history of the nation, state, region, or city. In contrast, the extant archival record regarding the site presents a wealth of specific and informative material, including maps, photographs, aerials, and building permits that provides significant material for interpretation. Thus, the extant physical structures of the site do not convey significant informational material that would inform the rather robust archival record regarding the Grayson Power Plant.

The Grayson Power Plant was constructed approximately 60 years after the early development of the City of Glendale and 35 years after the City incorporated electricity in 1906. Due to this passage of time it is not associated with the early heritage of the City and not eligible for listing on the GRHR.

While the GRHR does not account for integrity, both the NRHP and CRHR do. Due to numerous building additions and continued evolution of the property there has been a loss of integrity of design, materials, workmanship, and feeling. The property retains integrity of location, setting, and association. The power plant has not moved, the overall setting has remained industrial, and it maintains its association as a power plant. However, numerous alterations have removed its integrity of design to the original plant conceived by Elliott, materials as the building materials, while similar are different in type and massing from the original section. The plant has lost its association of workmanship as the additions have fundamentally altered the physical characteristics of the building as original constructed in 1941 and finally the plant has lost its original feeling. Aside from the numerous building additions continued addition of non-attached boiler units with modern cooling towers and ancillary buildings have removed the original feeling of the property. Therefore, the building has lost integrity coupled with lack of significance the building is not eligible for the NRHP or CRHR under any criterion.

Photographs (Continued):



Photograph 2. Grayson Boiler Building, View Looking Northwest (Photo by J. Terry).

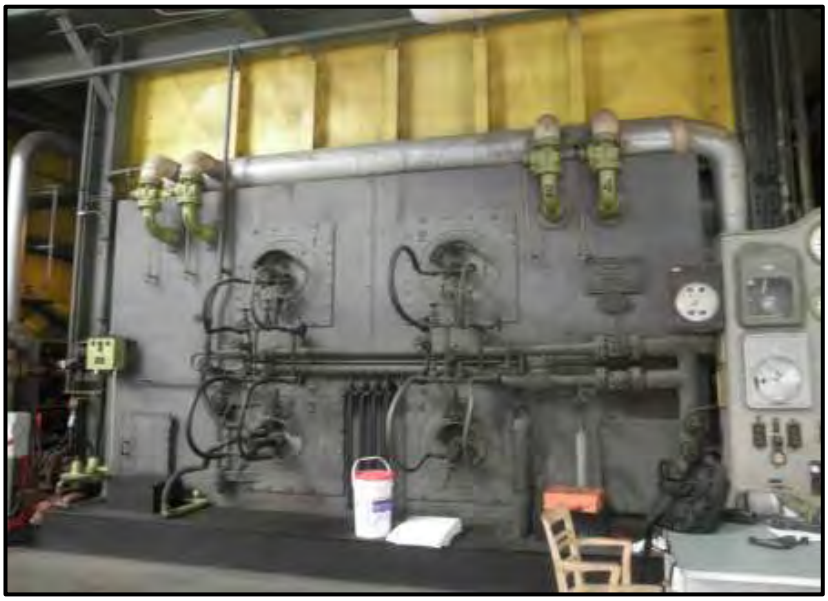
Photograph 3. Grayson Boiler Building, View Looking Northwest (Photo by J. Terry).

Photograph 4. Grayson Boiler Building, View Looking Southwest (Photo by J. Terry).

Photograph 5. Grayson Boiler Building, View Looking Southeast (Photo by J. Terry).

Photograph 6. Boiler Stacks (Boilers 1 and 2 Center Rear of Photograph; Boiler 3 to Left), View Looking South. (Photo by J. Terry).

Photograph 7. Overview of Basement Floor Level, View Looking North (Photo by J. Terry).



Photograph 8. View of Boiler 1B, Looking West (Photo by J. Terry).

Photograph 9. Unit 8A, Looking West (Photo by J. Terry).

Photograph 10. Units 8A & 8B, View Looking Northeast (Photo by J. Terry**).**

Photograph 12. Cooling Tower No. 2 (No. 1 in background), View Looking Southeast (Photo by J. Terry).

Photograph 13. Cooling Tower No. 3 (No. 5 in Background), View Looking Northwest (Photo by J. Terry).

Photograph 14. Cooling Tower No. 4, View Looking Northeast (Photo by J. Terry).

B12. References, Continued.

American Institute of Architects
1956 "E Architects." American Architects Directory.

Beck, Douglas Stephen and David Gordon Wilson
1996 *Gas Turbine Regenerators* Chapman & Hall

California Energy Commission
2014 "Database of California Power Plants." File date May 1, 2014. Accessed November 19, 2015: http://www.energyalmanac.ca.gov/powerplants/index.html.

2015 "List of Inactive/Retired Power Plants (1915-2004). Accessed on November 19, 2015: http://www.energyalmanac.ca.gov/electricity/inactive_plants.html.

California Office of Historic Preservation

1999 "California Register and National Register: A Comparison (for purposes of determining eligibility for the California Register)." Technical Assistance Series, No. 6. Sacramento: California Department of Parks and Recreation.

City of Glendale

1972 "Resolution in designating steam plant to L.W. Grayson." October 10, 1972.

2010 "Approval to Issue a Request for Proposals (RFP) for the Grayson Power Plant Unit No. 3 Cooling Tower Replacement." Report to the City Council. 28 September 2010. Accessed December 30, 2015 at: http://www.ci.glendale.ca.us/government/council_packets/Reports_092810/CC_5g_092810.pdf.

2011 "Approval to Issue a Request for Proposal (RFP) for the Grayson Power Plant Unit No. 4 Burner Management System and Boiler Control System Upgrade." Report to the City Council, February 11, 2011. Accessed December 30, 2015 at: http://www.ci.glendale.ca.us/government/council_packets/Reports_021511/CC_5a_021511.pdf.

2012a Popular Annual Financial Report. June 20, 2012. Accessed December 25, 2015 at: http://www.glendaleca.gov/home/showdocument?id=9653.

2012b "Overview of Glendale History." May 17, 2012. Accessed on December 25, 2015 at: http://www.ci.glendale.ca.us/history_overview.aspx.

2012c "How to Get Your Property Listed on the Glendale Register of Historic Resources." November 2012. Accessed 25 December 2015 at: http://www.glendaleca.gov/home/showdocument?id=12454.

2014 Glendale Register of Historic Resources. Updated February 2014. Accessed at: http://www.ci.glendale.ca.us/planning/HPGlendaleRegister.asp.

2014 "Specification No. 3541 to Provide Mechanical and Field Services for the Grayson Power Plant (GPP)." Report to the City Council. April 29, 2014. Accessed December 30, 2015 at: http://www.ci.glendale.ca.us/government/council_packets/Reports_042914/CC_5e_042914.pdf.

City of Pasadena

2015 "Pasadena Water and Power" Accessed on November 19, 2015: http://cityofpasadena.net/waterandpower/Our_History/.

Coleman, Charles M.

1952 PG and E of California The Centennial Story of Pacific Gas and Electric Company 1852-1952, (New York: McGraw-Hill Book Company, Inc.

Cook, Jack

1977 "Power Plant Director Keeps a Close Watch over Glendale's Lifeline." Daily News. Located at the City of Glendale's Central Library, Special Collection.

Cowan, Robert C.

1977 *Ranchos of California a list of Spanish Concessions 1775-1822 and Mexican Grants 1822-1846. Los Angeles:* Published by the Historical Society of Southern California.

Department of Energy

2015 "The War of the Currents: AC vs. DC Power." Accessed January 30, 2015, http://energy.gov/articles/war-currents-ac-vs-dc-power.

Environmental Data Resources, Inc. (EDR)

2015 EDR Aerial Photo Decade Package: Grayson Power Plant, 800 Air Way, Glendale, California. (Inquiry Number: 443851.9). October 13, 2015.

Frickstad, Ivan.

1916 "the Development of 'Pacific Service' Architecture as Exemplified in Its Modern Power Houses and Substations," *Pacific Service Magazine*, 8 no. 6.

Galvin Preservation Associates (GPA)

2007 *City of Glendale Reconnaissance Survey and Historic Context Statement of Craftsman Style Architecture 2 006-2007, Certified Local Government Grant*. Prepared for the City of Glendale. October 2007

Glendale Public Service Commission

1951 Annual Report of the Public Service Commission. Report on file at the Glendale Public Service Commission.

Glendale Public Services Department

1974 "History." April 1974. Manuscript on File at the Glendale Public Service Department, Glendale, CA.

Glendale News-Press

1953a "Purchased Power—city Makes Own Energy Since 1941." November 13,1953, Page 7-C.

1953b "City to Glow—7-yar Light Program Starts." November 13,1953, Page 5-C.

1953c "More Demand for Energy Anticipated." November 23, 1953, Page 8-C.

1953d "New Unit Keeps Pace with Science—Third Turbine Uses More Heat, Pressure." November 13, 1953, Page 3-C.

1953e "Third Generating Unit—Plant set to Operate Next April." November 12, 1953.

1953f "Steam Plant Third Unit Completed—20,000 kilowatt hours more energy available."

1972 "Lauren Grayson, longtime city official, dies." May 22, 1972.

Hayes, Brian

2014 Infrastructure A Guide to the Industrial Landscape. W.W. Norton and Company.

Hubbard, Steve
2006 "Hydropower in California," Sacramento History Journal VI

JRP Historical Consulting Services
2000 "Water Conveyance Systems in California," California Department of Transportation Environmental Program/Cultural Studies Office.

LA Conservancy

2015 "Burbank Water & Power Company." Accessed on December 28, 2015 at: https://www.laconservancy.org/locations/burbank-water-and-power.

Los Angeles Times

1940 "Power Plant Built in Open: Glendale Will have First Completed Quake-Proof Setup." June 30, 1940. Provided to Stantec from ProQuest Historical Newspapers by Greg Grammer of the Glendale Historical Society.

Los Angeles Almanac

2015 "General Population of the City of Los Angeles County, 1910–1950." Accessed at September 3, 2015: http://www.laalmanac.com/population/po26.htm.

Mikailian, Arin

2015 "Plans Ordered to Redo Facility." Glendale News-Press, June 6, 2015.

Moskowitz, Gary

2004 "Glendale Gets Power Boost." Glendale News-Press, April 13, 2004.

Myers, William A.
1984 Iron Men and Copper Wires: A Centennial History of the Southern California Edison Company Trans-Anglo Books

National Park Service

2002 "Bulletin #15, How to Apply the National Register Criteria for Evaluation." Edited by Patrick W. Andrus and Rebecca H. Shrimpton. Washington D.C.: National Park Service, National Register Program. Accessed December 30, 2015 at: http://www.nps.gov/nr/publications/bulletins/nrb15/index.htm.

Nationwide Environmental Title Research, LLC (NETR Online)

2015 Historic Aerials from 2015-1952. Accessed on December 30 2015 at: www.historicaerials.com.

Perez, Cristotomo

1996 *Land Grants in Alta California: A Compilation of Spanish and Mexican private land claims in the State of California*. Rancho Cordova: Landmark Enterprises.

Perry, E. Caswell, and Carroll W. Parcher

1981 *Glendale Area History*. Second Edition. Glendale: Eric Schneirsohn, Xanadu Galleries. Pp. 59-61.

Ralph, Mason

1977 "City Installing New Generators." Burbank Ledger January 1, 1977.

Rees, Julie

1978 "Reclaimed Water Brings Power to the People." Glendale News-Press March 31, 1978.

Root, Garret and Rand Herbert

2013 From Sawdust to Uranium: The History of Electrical Power Generation in Humboldt County and Pacific Gas and electric Company's Humboldt Bay Power Plant 1883-2019. Pacific Gas and Electric Company.

Scholl Canyon Landfill

2015 "Scholl Canyon Landfill." Accessed August 31, 2015: http://schollcanyonlandfill.org/#!clients/ServicesPage-bmmaq7o0

Steele, I.C.

1950 "Steam Power Gains on Hydro in California," Civil Engineering (January 1950). Transmission Agency of Northern California.

2017 "California-Oregon Transmission Project," Accessed December 17, 2017. http://www.tanc.us/cotp.html

Spencer, R.W.

1961 "Cooling Water For Steam Electric Stations in Tidewater." Transactions of the American Society of Civil Engineers

Termuehlen, Heinz

2001 100 Years of Power Plant Development: Focus on Steam and Gas Turbines as Prime Movers. ASME Press.

URS Corporation (URS)

2003 City of Glendale Water & Power Grayson Unit 9 Project: Cultural Resources. Prepared for the City of Glendale. January 2003.

Vincent, Jr, W.G

1925 "The Interconnected Transmission System of California," Journal of Electricity LIV

Water and Power Associates

2015 "First Electricity in Los Angeles." Accessed November 19, 2015: http://waterandpower.org/museum/First%20Electricity%20in%20Los%20Angeles.html.

2017 "Early Power Generation." Accessed December 17, 2017: http://waterandpower.org/museum/Early_Power_Generation.html

Watts, John T.

1954 "City Started Power Service in '09." Glendale News-Press. August 16, 1954.

Wells, Jason

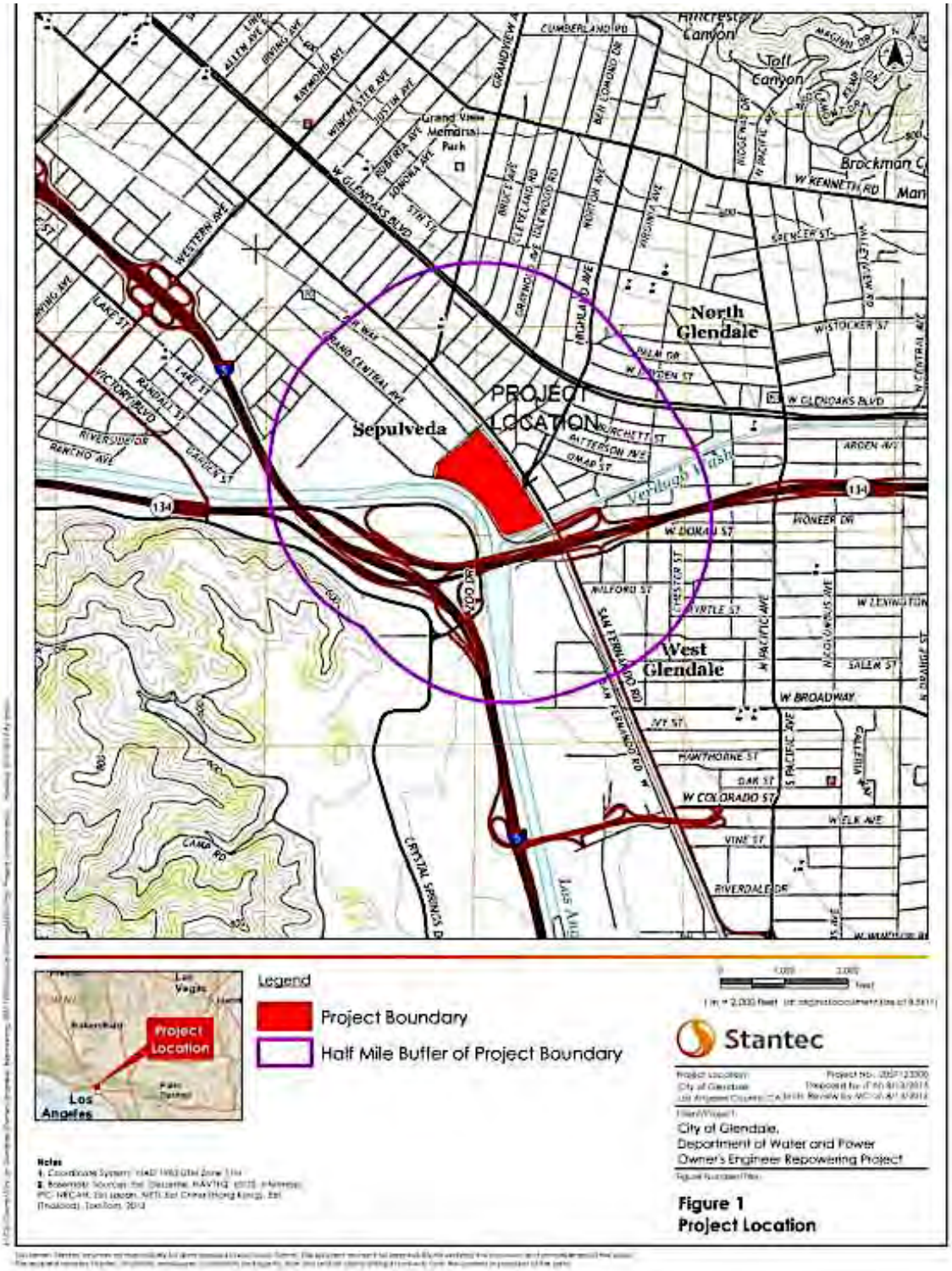
2010 "Fire Breaks Out at Plant." Glendale News-Press July 16, 2010.

Williams, James C.

1997 Energy and the Making of Modern California. Akron, Ohio: University of Akron Press.

Yamada, Katherine

2008 "Power Plant Still Serves the City Well." Glendale News-Press November 21, 2008.


PROJECT LOCATION
Sepulveda
North Glendale
West Glendale
Verdugo Wash
Legend
Project Boundary
Half Mile Buffer of Project Boundary
Project Location
Los Angeles
Stantec
City of Glendale,
Department of Water and Power
Owner's Engineer Repowering Project
Figure 1
Project Location

Appendix B~~RECORDS SEARCH AND~~ URS CORPORATION 2002 IS/MND TECHNICAL CULTURAL RESOURCES REPORT

THIS APPENDIX HAS BEEN OMITTED FROM PUBLIC DISTRIBUTION AS IT CONTAINS CONFIDENTIAL CULTURAL INFORMATION/DATA