5.0 ALTERNATIVES

A. INTRODUCTION

CEQA requires that an EIR describe a reasonable range of alternatives to the project, or to the location of the project that could feasibly avoid or lessen significant environmental impacts while substantially attaining the basic objectives of the project. An EIR should also evaluate the comparative merits of the alternatives. This section sets forth potential alternatives to the proposed project and evaluates them, as required by CEQA.

Key provisions of the *CEQA Guidelines* (Section 15126.6) pertaining to the alternatives analysis are summarized below.

- The discussion of alternatives shall focus on alternatives to the project or its location that are capable
 of avoiding or substantially lessening any significant effects of the project, even if these alternatives
 would impede to some degree the attainment of the project objectives, or would be more costly.
- The no project alternative shall be evaluated along with its impact. The no project analysis shall discuss the existing conditions at the time the notice of preparation is published, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.
- The range of alternatives required in an EIR is governed by a "rule of reason"; therefore, the EIR must evaluate only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project.
- For alternative locations, only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR.
- An EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative.
- Based on the alternatives analysis, CEQA requires that an environmentally superior alternative be designated. If the environmentally superior alternative is the No Project Alternative, then the EIR is required to identify an environmentally superior alternative among the other alternatives.
- In addition, CEQA requires that an EIR identify any alternatives that were considered for analysis but rejected as infeasible. Such potential alternatives are described below.

The range of alternatives discussed in an EIR is governed by the "rule of reason," mentioned above, that requires the identification of only those alternatives necessary to permit a reasoned choice between the alternatives and the proposed project. The range of feasible alternatives is selected and discussed in a manner to foster meaningful public participation and informed decision-making. Among the factors that may be taken into account when addressing the feasibility of alternatives (as described in the *CEQA Guidelines*, Section 15126.6(f)(1)), are site suitability, economic viability, availability of infrastructure, general plan consistency, regulatory limitations, jurisdictional boundaries, and whether the proponent could reasonably acquire, control, or otherwise have access to the alternative site. An EIR need not consider an alternative if its effects cannot be reasonably identified, its implementation is remote or speculative, or if it would not achieve the basic project objectives.

This analysis includes No Project Analysis, as required by CEQA, which shows how the Pasadena Water & Power's (PWP) Glenarm Power Plant Repowering Project's impacts would be avoided with no material change in the existing uses and conditions on the site. Two additional alternatives were selected to address the project's significant and unavoidable impacts as well as significant but mitigable impacts.

B. PROJECT OBJECTIVES

The underlying project purpose is increased reliability of local power generation. The objectives of the Glenarm Power Plant Repowering Project include the following:

- Maintain reliable local generation needed to provide uninterrupted power within the City as a contingency against dependence on a single electricity import connection to the City;
- Maintain the City's ability to generate power locally, as and when needed, to make up for any shortfall due to import or distribution system constraints;
- Implement the energy IRP approved by the City of Pasadena City Council with input and feedback from the community, which serves as a blueprint for PWP to provide customers with a balance between reliable electricity service, consideration of environmental concerns, and competitive and stable rates, and reduced dependence on coal power. The replacement of an aging and inefficient generating unit Broadway 3 (B-3) at the City's power plant with a more reliable and efficient, local, natural gas-fueled, combined-cycle generating unit equipped with a state-of-the art air pollution control system was one of the energy IRP recommendations approved by the City Council;
- Provide for mandated capacity (i.e., guarantee of availability) to generate power when required by the California Independent System Operator (CAISO);
- Rehabilitate the unused, historic Glenarm Building and repurpose into productive work space for power plant operations such as a control station, instrument shop, and administrative offices;
- Enable designation of the Glenarm Building as an essential facility for operation of the power plant through the implementation of seismic upgrades to current State Building Code standards; and
- Maximize the use, efficiency, and security of the power plant by consolidating existing administrative offices, control stations, maintenance facilities, and shared and public spaces that are currently scattered throughout the power plant, to ensure visual and physical proximity of support facilities and power generation units.

C. SELECTION OF ALTERNATIVES

Section 15126.6(c) of the *CEQA Guidelines* states that an EIR must briefly describe the rationale for selection and rejection of alternatives to be discussed in the EIR. The lead agency may make an initial determination as to which alternatives are feasible and therefore merit in-depth consideration, and which are infeasible, and provide a brief explanation of the reasons for their exclusion. Alternatives that are remote or speculative, or the effects of which cannot be reasonably predicted, need not be considered (*CEQA Guidelines*, Section 15126.6(f)(3)). Alternatives may be eliminated from detailed consideration in the EIR if they fail to

meet most of the project objectives, are infeasible, or do not avoid any significant environmental effects (*CEQA Guidelines*, Section 15126.6(c)).

1. Significant Project Effects

The alternatives evaluated in this Draft EIR were selected based on their potential to avoid or reduce potentially significant impacts of the proposed project, particularly those that could not be mitigated to a level below the threshold of significance. The proposed project would result in the following project-specific or cumulative significant and unavoidable, or significant but mitigable, impacts:

a. Cultural Resources: Archaeological and Paleontological Resources

Construction Impacts

With respect to archaeological resources, the project site has been in continuous use as a power plant for over a century and has been periodically subject to construction-related disturbance. The City's General Plan EIR determined that infill development in already developed areas of the City is generally not anticipated to result in the uncovering of previously unknown archaeological resources. Although the potential to encounter such resources on the project site is therefore considered remote, the Initial Study prepared for the proposed project conservatively determined that this represents a potentially significant impact and identified mitigation to reduce impacts to a less than significant level in the unlikely event resources are encountered during project construction. The mitigation measure ensures that if archaeological resources are encountered during project implementation, an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards would be retained by the applicant and approved by the City, would be empowered to temporarily divert or redirect grading and excavation and would oversee the proper monitoring, recovery, evaluation, documentation, and treatment of resources. With implementation of this mitigation, impacts on archaeological and Native American resources would be less than significant.

With respect to paleontological resources, this part of the City does not contain any unique geologic features and is not known or expected to contain paleontological resources. Based on a recent paleontological records search conducted for the area, including the project site, this area sits atop younger Quaternary deposits that typically do not contain significant vertebrate fossils in the uppermost layer. While underlying older Quaternary Alluvium deposits may contain significant vertebrate fossils, excavation is only proposed to a depth of approximately five feet for the proposed project. Therefore, construction of the project is considered to have low potential to encounter paleontological resources. Nonetheless, the Initial Study prepared for the proposed project determined that this represented a potentially significant impact and identified mitigation to reduce this impact to a less than significant level in the unlikely event that paleontological resources are encountered during project construction. The mitigation measure ensures that a qualified paleontologist will attend a pre-grade meeting and determine whether proposed excavations would extend into the older Quaternary Alluvium underlying the project site, where there is higher potential for paleontological resources. If excavation into Quaternary Alluvium is anticipated, the paleontologist would prepare a monitoring program and, in the event that resources are uncovered, would be empowered to temporarily divert or redirect grading and excavation and would oversee the proper monitoring, recovery, evaluation, documentation, and treatment of resources.

b. Cultural Resources: Historical Resources

Construction Impacts

In addition to the construction of approximately 18,000 square feet of administrative/control room facilities, maintenance facilities, and public and shared space within the Glenarm Building, PWP proposes to conduct hazardous materials abatement throughout the building to render the building interior habitable. This includes removal of asbestos-coated boilers from the boiler room in the southwestern portion of the building, and removal and/or encapsulation of lead-based paint on existing equipment in the turbine hall, in the northwestern portion of the building. While the boilers to be removed are not character-defining features of the Glenarm Building, their location creates a floor-to-ceiling hallway within the boiler room that is a character-defining feature, and the boilers support a floating master gauge that is also a character-defining feature.

Removal of these features would not fully comply with the Secretary of the Interior's Standards for Rehabilitation.¹ Specifically, removal of the floor-to-ceiling hallway and floating master gauge would not comply with Standard 2, which requires the retention and preservation of distinctive materials and avoidance of any alteration of features, spaces, and spatial relationships that characterize a property; Standard 4, which requires retention and preservation of changes to a property that have acquired historic significance in their own right; or Standard 9, which prohibits the destruction of historic materials, features, and spatial relationships that characterize a property.

Accordingly, removal of the floor-to-ceiling hallway and floating master gauge are considered potentially significant impacts on historical resources. Impacts would be reduced to a less than significant level with implementation of the required mitigation measures, which specify Historic American Buildings Survey (HABS) level III recordation of removal of character-defining features, construction of an interpretive exhibit of the original boiler room layout for future display, and the review of construction plans and construction monitoring by a qualified preservation consultant.

c. Greenhouse Gas Emissions

Construction Impacts

Construction activities associated with the proposed project would emit greenhouse gases (GHGs) during construction activities which will take approximately 23 months. Project analysis indicates that construction would emit 1,307 metric tons of carbon dioxide equivalents (MT CO₂e). Consistent with SCAQMD guidance, the significance of construction GHG emissions, which are temporary in nature, is determined in conjunction with any long-term increases in operational GHG emissions.

Operational Impacts

Potential maximum annual GHG emissions of carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) for the operation of Unit GT-5 were calculated using the calculation methods and emission factors from the United States Environmental Protection Agency (USEPA) GHG Reporting Regulation and CalEEMod. Emissions from the operation of GT-5 were considered for both configurations (GE LM 6000 and Rolls Royce

¹ 36 Code of Federal Regulations, Section 67.7.

Trent 60). The increase in annual GHG emissions resulting from power generation, vehicle, electrical, and natural gas usage associated with operation of the Glenarm Repowering Project were estimated to be 253,030 MT CO₂e for the GE LM6000 CT and 255,702 MT CO₂e for Rolls Royce Trent 60, including amortized construction emissions. This level of increase would exceed the SCAQMD screening threshold of 10,000 metric tons CO₂e per year, and impacts are considered potentially significant.

The proposed new turbine would comply with Emissions Performance Standards (EPS) requirements established by SB 1368. The statewide EPS required by SB 1368 is 1,100 lb CO₂e per MWh. The analysis indicates that both configurations (GE LM6000 or Rolls Royce Trent 60) operating at its maximum allowable rating would remain below the significance threshold of 1,100 lb CO₂e per MWh. Therefore, the project would result in a less than significant impact with respect to the EPS requirements. Additionally, the Unit GT-5 emissions performance standard represents an approximately 19 percent improvement (decrease) in emissions compared to Unit B-3, as measured on a maximum hourly or daily basis.

Unit B-3 operates approximately 2,000 hours annually, typically when demand exceeds import capacity, and GT-5 is expected to operate in a similar manner to meet the City's needs. However, because of its increased energy efficiency (and resultant lower cost to produce power) and relatively short start-up time, Unit GT-5 may be utilized more than Unit B-3 currently is to meet City or CAISO obligations, as an assurance against unanticipated shortfalls in supply. Therefore, based on the potential to operate up to 8,760 hours per year, the increase in annual GHG emissions could exceed the SCAQMD's mass emissions significance thresholds, and the SCAQMD GHG working group recommends that applicable performance standards be utilized to minimize emissions to the extent feasible. Unit GT-5 would be a combined-cycle natural gas fueled power generating equipment. However, there are no feasible mitigation measures available to reduce turbine emissions beyond what is already included in the project design. Impacts would be significant and unavoidable.

Cumulative Impacts

The project would include numerous project design features to reduce GHG emissions, as well as features that address strategies consistent with the City of Pasadena's Green Building Ordinance for reducing GHG emissions. Implementation of project design features will ensure that impacts from GHG emissions are minimized. Even though emissions from the turbine will meet EPS requirements and the control room building will meet the City's amended California Green Building Standards Code requirements, implementation of the proposed project will result in an increase in locally-produced GHG emissions.

As stated above and in **Section II**, *Project Description*, of this Draft EIR, the primary objective for the replacement of Unit B-3 is to ensure the reliability of locally produced power, to be used when local demand exceeds import capacity, in the event of loss or reduction of imported power from the grid, or when it is fiscally preferable to produce power locally. Although it is anticipated that Unit GT-5 will run approximately 2,000 hours per year, similar to current practices with Unit B-3, impacts from pollutants with long-term effects, such as GHGs, TACs, and some criteria pollutants, were analyzed based on operation of GT-5 up to its permitted limit of 8,760 hours per year (24 hours per day, 365 days per year). In addition, the City is required to produce and provide power to the Statewide grid (for which it is paid) when directed by CAISO, and it is likely that Unit GT-5, given its lower cost and quicker start-up time, will be used more often than Unit B-3 is currently used.

According to the California Energy Commission, (CEC) "new, efficient, natural gas-fueled cogeneration and generation promotes the State's efforts to improve GHG electrical generation efficiencies and, therefore, reduces greenhouse gas emissions and the amount of natural gas used by electricity generation."² Thus, the proposed project's use of energy more efficiently and the replacement of older existing Unit B-3 would further the State's strategy to promote efficiency and reduce fuel use and GHG emissions. From a Statewide perspective, the net GHG emissions for the integrated electric system will decline when new gas-fueled power plants are added to improve the overall efficiency of the electric system and serve capacity needs more efficiently than the existing system.

The design of GT-5 as a combined cycle unit represents the Best Available Control Technology (BACT), and would be more energy efficient and less GHG-polluting than Unit B-3 and many other older units operated State-wide. Therefore, on a regional basis, GHG emissions would remain unchanged or reduce slightly with the use of Unit GT-5 replacing the use of older, less efficient, more polluting power generating units elsewhere to meet the demand. Nonetheless, GHG emissions from the project are conservatively considered net new on a cumulative basis and the project is considered to have a cumulatively considerable contribution to cumulatively significant GHG emissions.

d. Hazards and Hazardous Materials

Construction Impacts

Project-related demolition activities on the project site would affect surfaces, infrastructure, and equipment known to contain asbestos-containing materials (ACMs) and lead-based paint (LBP). With respect to the Glenarm Building, the main room, turbine room, boiler room, roof, and portions of the exterior facades contain ACMs. The existing Pump Building on the one-acre parcel south of State Street proposed to house maintenance, machine work, and welding shops also contains ACMs. Components of the Glenarm Building (including metal, concrete, painted wood, stucco, fiberglass, and wood features) contain LBP at or above Federal action levels. The potential for the release of ACMs and LBP into the environment during demolition or construction is considered a significant impact. Impacts would be reduced to a less than significant level with the required mitigation measures that include City approval of ACM and LBP surveys, disposal in accordance with OSHA regulations, and submittal of proof of such handling to the City.

Project grading and excavation would also necessitate the removal of contaminated soils that were identified in the Phase II investigation performed in the proposed location of Unit GT-5. The Phase II investigation also noted that additional contaminated soils may exist elsewhere on the portions of the project site subject to physical disturbance. The potential for the release of associated hazardous materials into the environment is considered a significant impact. Impacts would be reduced to a less than significant level with the required mitigation measures, which would ensure the excavation, stockpiling, and testing of potentially contaminated soils in accordance with the recommendations of the Phase II investigation performed for the project, and the preparation of a soils management plan for City approval to ensure proper disposal of contaminated soils.

² California Energy Commission, Watson Cogeneration Steam and Electric Reliability Project, Final Staff Assessment, (2011) 4.1-99.

e. Land Use and Planning

The project site is located within the South Fair Oaks Specific Plan area, and the General Plan Land Use designation is SP-2 (SP-2 Overlay District). The Specific Plan Overlay District designates an area intended to support technology-based industries, including biomedical. The SP-2 designation permits those land uses already permitted by underlying zoning, in addition to life/care facilities, extended care medical services, and some multi-family residential and general residential care uses. Major utilities are permitted on the project site with a Conditional use Permit (CUP). The majority of the project site, including the Broadway Plant and the easternmost portion of the Glenarm Plant, is zoned IG SP-2, HL "56" (General Industrial with a maximum height limit of 56 feet). The westernmost portion of the Glenarm Plant, adjacent to Fair Oaks Avenue, is zoned IG SP-2, AD-2 (General Industrial, Alcohol Density, which governs separations between new bars and taverns.)

Under either of the two proposed manufacturer configurations being considered, the proposed new power generating Unit GT-5 would include a 125-foot once-through steam generator (OTSG) stack to prevent ground-level pollutant concentrations that exceed ambient air quality standards. Although four other stacks of this height already exist on the Glenarm Plant and additional stacks of similar height are present on the Broadway Plant, the proposed new stack would exceed the 56-foot maximum height limit on the project site. A variance from the height restriction specified in the Zoning Code would be required.

Additionally, the proposed project includes a new 45-space parking lot south of the Glenarm Building and the site of proposed Unit GT-5, as this is the only remaining open space on the project site after installation of the power generating unit. The South Fair Oaks Specific Plan, Development Standard 3.3.3-B.4, Parking and Loading, requires proposed new on-site parking facilities to be located to the rear of a parcel, between the main building on a project site and the rear property line (for lots that front on multiple streets, the City's Zoning Administrator determines the rear property line). Therefore, a variance from the Specific Plan development standard for parking may be required.

Since the proposed project would exceed the height limitation under existing zoning and conflict with the parking lot location development standard established by the Specific Plan, and there is no feasible mitigation to reduce these impacts to a less than significant level, the project is considered to have significant and unavoidable land use impacts.

2. Alternatives Considered but Rejected

Section 15126.6(c) of the *CEQA Guidelines* suggests that an EIR identify alternatives that were considered for analysis but rejected as infeasible and briefly explain the reasons for their rejection. According to the CEQA Guidelines, the following factors may be used to eliminate alternatives from detailed consideration: the alternative's failure to meet most of the basic project objectives, the alternative's infeasibility, or the alternative's inability to avoid significant environmental impacts. Alternatives that have been considered by the City and rejected as infeasible are discussed below.

a. Demand Reduction

As mentioned, the 2009 energy IRP proposes the management of Pasadena's power usage through actions on both the supply and demand sides. In an effort to achieve reductions in electricity consumption, the energy IRP identified the following targets: 1) reducing energy sales by 12.5 percent below business-as-usual levels

by 2016; 2) reducing peak load by 10 percent below business-as-usual levels by 2012; and 3) further reducing peak load by an additional 5 MW by 2012 through education and economic incentives to customers. PWP offers a number of residential energy programs and rebates to encourage residents to improve their energy and water usage efficiency. These include, but are not limited to, rebates for qualifying Energy Star appliances and lighting, efficient home cooling, refrigerator recycling, all-electric households, and pool pumps. PWP customers can obtain substantial savings by both updating their appliances to current, energy-efficient models as well as actively reducing electricity consumption. In addition, PWP has initiated the Advanced Meter Pilot Program, an American Public Power Association grant-funded project to replace approximately 200 existing electric meters with more advanced meter technology. Compared to the meters currently used by PWP, the advanced meters are able to detect power outages and aberrant voltage on a power line and alert PWP of the issues. If the program proves successful, the advanced meters will play an important role in PWP's future ability to maintain and improve system reliability.

However, while important, the implementation of these demand-side measures will not sufficiently reduce electricity consumption in the City of Pasadena to meet the underlying project purpose, which is increased reliability of local power generation, or the associated project objectives. For these reasons, demand reduction is not considered a feasible alternative to the proposed project.

b. Continued Local Power Generation with Existing Equipment

The operating hours of Unit B-3 could theoretically be increased from the current 2,000 hours per year to a maximum of 8,760 hours per year. This would reduce Pasadena's need to import power in the short term, as long as Unit B-3 remains operational. However, this is not economically feasible since operating costs of Unit B-3 are approximately 70 percent higher than for contracted power, and existing "use it or lose it" contracts are in place for power purchases from remote providers for the foreseeable future. Unit B-3 was originally installed in 1965 and is aging and increasingly inefficient, and increasing its operating hours will shorten its lifespan. At some future point, Unit B-3 will no longer be operational and will be decommissioned. At that time, the City will be forced to operate Units GT-1, -2, -3, and -4 almost continuously, replace Unit B-3, or purchase more imported power than under existing conditions. Existing decommissioned Units B-1 and B-2 were built in the 1950s and parts are not interchangeable with those of Unit B-3. Likewise, Units GT-1 and GT-2 were built in the 1970s and Units GT-3 and GT-4 were built in 2004, and their parts are not interchangeable. In some instances, manufacturers of specific parts for all of the units have gone out of business and parts are not obtainable. Moreover, Unit GT-1 is currently under contract for repair and Unit GT-2 is currently out of commission as the result of a fire in October 2012. For these reasons, continued local power generation with existing equipment was not considered a feasible alternative to the proposed project.

c. Renewable Energy Sources (Solar, Wind, Landfill Gas, Hydroelectric, Geothermal, and Nuclear)

Pasadena Water and Power (PWP) is a municipal utility that manages a service territory of 58,000 residential and commercial customers with a peak load of slightly more than 300 megawatts (MW). PWP's electricity sales growth has averaged less than one percent per year over the past two decades, due in large part to limited opportunities for expansion of its residential and commercial customer base. Total sales grew from 1.07 terawatt hours (TWh) in 1990 to 1.22 TWh in 2007, for an average annual growth rate of 0.8 percent (1 TWh = 1,000,000,000 Wh). Without accounting for demand side management and energy

efficiency programs, sales growth over the near term is estimated to average 1.2 percent per year, and long-term growth (through 2030) is estimated to average 0.5 percent per year.³

In 2009, PWP prepared an Integrated Resource Plan (IRP) in which it established the Preferred Resource Plan to manage the supply and demand sides of power consumption in Pasadena. Key action items of the Preferred Resourced Plan include reducing purchases of coal-fueled power from IPP by at least 35 MW (33 percent) by 2016 and meeting and exceeding the state-mandated Renewable Portfolio Standards of 33 percent by 2020. PWP has established interim targets of 20 percent of all retail sales by 2013 and 25 percent by 2016, and the 2012 IRP now recommends meeting at least 40 percent RPS by 2020. The energy IRP reconfigures PWP's electricity portfolio to reduce its greenhouse gas (GHG) emissions while adding a diverse mix of renewable energy supply resources, such as wind, solar, geothermal, and landfill gas, to replace the use of coal-generated power. Additionally, the Plan stipulates implementation of energy efficiency and load management programs to curb demand. It also proposes the construction of an efficient combined-cycle plant to replace existing units located in Pasadena's municipal power plant to ensure reliable local generation. The energy IRP was recently updated (March 2012) to account for the decline in demand and economic downturn since 2008, cap-and-trade program for GHGs, and to establish the path to meeting and exceeding the statewide 33 percent Renewable Portfolio Standard (RPS) established by the California Renewable Energy Resources Act (Senate Bill X1-2).

PWP owns over 200 MW of on-site, natural gas-fueled local generation and is capable of importing up to 215 MW more through its interconnection with Southern California Edison. Pasadena also has ownership shares and long-term contracts with a number of power generation facilities located throughout the west. As of 2011, the energy PWP provides to its customers is produced from the following sources:

- Coal 57%
- Renewables 19%
- Gas-fueled 13%
- Nuclear 6%
- Hydro 4%
- Other 1%

There remain substantial obstacles to expanding renewable power production, both locally and remotely. Renewable resource options are often highly limited by geographic location, which may face transmission obstacles to delivering power to Pasadena, or by general resource availability in the area, as is the case for landfill gas. The following discusses the limitations with alternatives to the project that rely on renewable energy sources.

Solar

The California Energy Commission (CEC) has identified areas within the State with high potential for viable solar, wind, and geothermal energy production. The CEC rated California's solar potential by county using

³ *PWP*, 2009 Integrated Resource Plan Report, *February 13, 2009*.

insolation values available to typical photovoltaic system configurations, as provided by the National Renewable Energy Laboratory. Although Los Angeles as a County has a relatively high photovoltaic potential of 3,912,346 MWh/day⁴, inland counties such as Inyo (10,047,177 MWh/day), Riverside (7,811,694 MWh/day), and San Bernardino (25,338,276 MWh/day) are more suitable for large-scale solar power generation. In addition, most of the high potential areas of greater than 6 KWh/sqm/day in Los Angeles County are concentrated in the northeastern corner of the county around Lancaster, approximately 40 miles away from Pasadena.

The 2009 IRP Report considered a high wind/solar portfolio option; however, the option was eliminated from consideration based on the cost and risks in excess of established plan metrics. While the high wind/solar option would achieve substantial GHG emission reductions, it could also increase PWP's exposure to reliability and commodity market risks because of their intermittent and unpredictable delivery patterns. As such, the high wind/solar option would not provide for mandated capacity (i.e., guarantee of availability) to generate power when required by CAISO. While large-scale solar energy generation to supply the majority of Pasadena's energy demands is not feasible, the energy IRP proposes increased production of local solar energy by the following timeline: 3 MW by 2010, 10 MW by 2015, 15 MW by 2020, and 19 MW by 2024. In addition, the energy IRP identified a rebate of \$4/watt as sufficient to make solar photovoltaic expansion cost-competitive.

Wind

The CEC also studied the State's high wind resource potential.⁵ The nearest existing wind farms are located approximately 50 and 65 miles away in San Gorgonio and Mojave, respectively. Wind resource areas with winds above 11 mph within Los Angeles County are also located in relatively remote areas in the northwestern portion of the County. As such, transmission of wind-generated energy to Pasadena is limited due to transmission capacity and because PWP has a single point of connection with the California power grid through Southern California Edison at the TM Goodrich substation on Pasadena's eastern border, limiting imports to 215 MW. Additionally, as previously discussed, the 2009 IRP Report considered a high wind/solar portfolio option; however, the option was eliminated from consideration based on the cost and reliability risks in excess of established plan metrics. As mentioned above for solar, the high wind/solar option would not provide for mandated capacity (i.e., guarantee of availability) to generate power when required by CAISO. Thus, large-scale wind energy generation to supply the majority of Pasadena's energy demands is not feasible.

Geothermal

The nearest known geothermal resource to Pasadena is Sespe Hot Springs in Ventura County, approximately 60 miles away. There is no known geothermal resource location within Los Angeles County.⁶ The 2009 IRP Report considered a high landfill gas/geothermal portfolio option; however, the option was eliminated from consideration due to the uncertainty associated with general availability and transmission to PWP. As such,

⁴ California Energy Commission, California Solar Resources. April 2005. http://www.energy.ca.gov/2005publications/CEC-500-2005-072/CEC-500-2005-072-D.PDF.

⁵ California Energy Commission. California Wind Resource Potential. http://www.energy.ca.gov/maps/renewable/Wind_Potential.pdf.

⁶ California Energy Commission. California Known Geothermal Resource Areas (KGRA). http://www.energy.ca.gov/maps/renewable/Geothermal_Areas.pdf.

geothermal would not provide for mandated capacity (i.e., guarantee of availability) to generate power when required by CAISO. Thus, large-scale geothermal energy generation to supply the majority of Pasadena's energy demands is not feasible.

Landfill Gas

Landfill gas is limited by general resource availability in the area. As previously discussed, the 2009 IRP Report considered a high landfill gas/geothermal portfolio option; however, the option was eliminated from consideration due to the uncertainty associated with their general availability and with regard to transmission to PWP. As such, landfill gas would not provide for mandated capacity (i.e., guarantee of availability) to generate power when required by CAISO. Thus, large-scale landfill gas energy generation to supply the majority of Pasadena's energy demands is not feasible.

Hydroelectric

Hydroelectric generation is limited by general resource availability in the area. Sufficient hydroelectric generation is unavailable to supply the majority of Pasadena's energy demands and it is unlikely that new large-scale hydroelectric sources would be developed in California in the near term. There are no potential hydroelectric sites within the project area or in the vicinity of the project area. As such, geothermal would not provide for mandated capacity (i.e., guarantee of availability) to generate power when required by CAISO. Thus large-scale hydroelectric generation is not feasible.

Nuclear

The State of California has two operating commercial nuclear power plants, the Pacific Gas & Electric Diablo Canyon Power Plant and the Southern California Edison San Onofre Nuclear Generating Station (although the latter is at least temporarily offline as of summer 2012). These nuclear plants account for 12 percent of the state's overall electricity supply.⁷ The CEC assessed the potential vulnerability of California's largest baseload power plants, which are California's two operating commercial nuclear power plants, to a major disruption due to seismic event or plant aging pursuant to Assembly Bill 1632.⁸ The CEC found that there are "substantial economic, environmental, and regulatory barriers to developing new nuclear power plants in California" and that "new nuclear plants cannot be relied on, at least in the near term, to meet California's AB 32 greenhouse gas emissions reduction goals for 2020."⁹ The 2009 IRP Report considered nuclear power generation; however, it was deemed an infeasible technology option for PWP on the grounds of capital requirements and general limited availability. As such, nuclear would not provide for mandated capacity (i.e., guarantee of availability) to generate power when required by CAISO. Thus, large-scale nuclear generation to supply the majority of Pasadena's energy demands is not feasible.

⁷ California Energy Commission. 2007 Net System Power Report. CEC-200-2008-002-CMF. April 2008. http://www.energy.ca.gov/2008publications/CEC-200-2008-002/CEC-200-2008-002-CMF.PDF.

⁸ California Energy Commission. An Assessment of California's Nuclear Power Plants: AB 1632 Report. CEC-100-2008-009-CMF. November 2008. http://www.energy.ca.gov/2008publications/CEC-100-2008-009/CEC-100-2008-009-CMF.PDF. AB 1632 directed the Energy Commission to assess "large baseload generation facilities of 1,700 megawatts or greater." Besides Diablo Canyon and San Onofre, there are two generating facilities (Alamitos and Moss Landing) that have a nameplate capacity greater than 1,700 MW. However, because both of these facilities operate below a 60 percent capacity factor, they are not considered baseload generation and were excluded from the study.

⁹ California Energy Commission. An Assessment of California's Nuclear Power Plants: AB 1632 Report. CEC-100-2008-009-CMF. November 2008. http://www.energy.ca.gov/2008publications/CEC-100-2008-009/CEC-100-2008-009-CMF.PDF.

d. Increased Importation of Power

The City of Pasadena owns over 200 MW of on-site, natural gas-fueled local generation and is capable of importing up to 215 MW through its interconnection with Southern California Edison. System reliability is a priority objective for the energy IRP. PWP has a single point of connection with the California power grid with Southern California Edison at the TM Goodrich substation on Pasadena's eastern border. This is a dominant factor affecting PWP's ability to maintain reliable electric service. In addition, PWP is required to provide for mandated capacity (i.e., guarantee of availability) to generate power when required by CAISO. PWP has a peak load of slightly more than 300 MW; thus, service reliability depends on local power generation units that must be used when customer demand exceeds 215 MW, and when constraints on PWP's cross-town transmission lines limit PWP's ability to serve customers reliably through imports. Accordingly, PWP operates the local units to comply with various reliability criteria, including the 215 MW import limit and constraints on PWP's cross-town transmission system.¹⁰

Addressing existing power generation reliability concerns through upgrades to PWP's existing import connections and cross-town transmission system is discussed in the Public Input Appendix to the 2009 energy IRP. As stated therein, a qualitative analysis prepared for the report determined that there are substantial financial and schedule obstacles that make those upgrades infeasible at this time and therefore prevent achievement of the proposed project's underlying purpose, which is increased reliability of local power generation, and the associated Project Objectives. The cost to upgrade the Citywide transmission system was estimated by Pace Global Energy Services, LLC, the report authors, at a minimum of \$100 million dollars, which includes an additional transformer bank at the existing TM Goodrich station in East Pasadena and a new underground 69 kV cross-town transmission line. Implementation of these improvements was assumed to require at least 10 years and possibly 20 years. The Public Input Appendix also stated that a 2003 Black & Veatch study prepared for PWP addressed the possibility of upgrading the West Pasadena point of connection with the City of Glendale and Southern California Edison's Eagle Rock substation, and ultimately recommended that this option not be pursued due to environmental impacts, cost, difficult terrain, and congestion of transmission lines.¹¹

For these reasons, this alternative is not feasible.

4. Alternative Project Location

The proposed project would replace the aging power generation Unit B-3 at the Glenarm Power Plant; consolidate new administrative facilities and control rooms for the existing and proposed power generation units within the Glenarm Building; renovate the existing Pump Building to serve as a mechanical shop to support the maintenance team for the entire Power Plant, housing general maintenance, machine work, welding, and storage; and provide parking for the majority of plant employees. Operation of proposed Unit GT-5 would require support infrastructure already in place on the Glenarm and Broadway Power Plants, including but not limited to aqueous ammonia tanks, natural gas supply, domestic and firefighting water supply systems, a firefighting suppression system, and a wastewater system. Moreover, operation of Unit GT-5 would be conducted by PWP employees already on-site and responsible for operation of the existing power generation units at the Glenarm and Broadway Plants.

¹⁰ *PWP*, 2009 Integrated Resource Plan Report, *February 13, 2009*.

¹¹ *PWP*, 2009 Integrated Resource Plan Report, *February 13, 2009, Public Input Appendix, p. 12.*

Approximately 18,000 square feet of administrative facilities/control stations/maintenance facilities/public and shared space would be constructed inside the existing Glenarm Building, which has historically housed power generation-related operations and is thus well suited to house the proposed new facility. The administrative facilities and control stations are required to be collocated with the associated power generation units, so that plant operators are in close physical proximity to the units in order to provide visual surveillance and conduct maintenance. Moreover, the Glenarm Building is proposed for designation as an essential facility in a major emergency, and as such PWP wishes to centralize administration and control of plant operations as much as possible at this location.¹²

The proposed project components are programmatically and operationally linked to one another and to the existing Glenarm and Broadway Power Plants, and physical proximity of the proposed project components to existing plant operations is essential. For this reason, no alternative project site, including other facilities operated by PWP, was considered for further evaluation.

D. ALTERNATIVES TO THE PROPOSED PROJECT

1. Summary of Alternatives

The three alternatives analyzed include the mandatory No Project/No Action: Continuation of Existing Practices Alternative; a Reduced Operations Alternative; and a Project Site Reconfiguration Alternative. The alternatives were selected for their potential to at least partially meet the basic objectives of the proposed project, and to lessen or avoid significant environmental effects resulting from implementation of the proposed project.

No Project/No Action Alternative: Continuation of Existing Practices. Section 15126.6(e) of the *CEQA Guidelines* requires the analysis of a No Project Alternative. This no project analysis must discuss existing conditions, as well as what would be reasonably expected to occur in the foreseeable future if the project were not to be approved based on current plans, site zoning, and consistent with available infrastructure and community services. Because the proposed project is a development project, Section 15126.6(e)(3)(B) of the *CEQA Guidelines* is directly applicable to the proposed project.

"If the project is a development project on an identifiable property, the "no project" alternative is the circumstance under which the project does not proceed. Here the discussion would compare the environmental effects of the property remaining in its existing state against environmental effects which would occur if the project is approved. If disapproval of the project would result in predictable actions by others, such as the proposal of some other project, this "no project" consequence should be discussed. In certain instances, the "no project" alternative means "no build" wherein the existing environmental setting is maintained. However, where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical

¹² Essential facilities are defined in Section 1602.1 of the State Building Code as "buildings and other structures that are intended to remain operational in the event of extreme environmental loading from flood, wind, snow or earthquakes." According to Section 1604.5 of the Building Code, such facilities include power generation facilities as well as surgery and emergency treatment facilities, fire departments, fire, rescue, ambulance and police stations, emergency shelters, water storage facilities, air traffic control facilities, and others. Essential facilities are designated as Occupancy Category IV buildings in the State Building Code, which determines a building's structural requirements, including seismic performance.

result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment."

The No Project/No Action Alternative assumes that the property would remain in its existing state as there are no known predictable actions, such as an alternative project, that would occur on the site if the proposed project were not approved. Under the No Project/No Action Alternative, the existing steam generating Unit B-3, which is located on the Broadway Plant, would not be decommissioned and would continue to operate as it currently does on an intermittent and as-needed basis, and PWP would continue to purchase power from its entitlement of coal-fueled power from the IPP facility, for approximately 60 percent of its needs. In addition, the No Project/No Action Alternative assumes no new construction of the administrative/control room and parking areas and no demolition activities for the removal of boilers in the southwest portion of the Glenarm Building. The Glenarm Building would not be rehabilitated to house City employees and would remain in its current deteriorating state. State Street immediately south of the Glenarm Plant, between Fair Oaks Avenue and the Gold Line, would not be closed and a one-acre parcel south of State Street would not be incorporated into the Glenarm Plant, and the Pump Building would not be renovated to serve as a mechanical shop to support plant-wide operations. The new parking area proposed adjacent to the Pump Building would not be constructed.

Reduced Operations Alternative. The Reduced Operations Alternative assumes that the property would be developed with the same equipment and infrastructure as the proposed project; however, the new Unit GT-5 would be limited to no more than 2,000 hours per year, similar to Unit B-3's current annual operating hours. Under this alternative, the existing steam generating Unit B-3, which is located on the Broadway site, would be decommissioned. Similar to the proposed project, the new Unit GT-5 (GE LM 6000 or Rolls Royce Trent 60) would replace the existing Unit B-3 with a cleaner and more reliable and efficient natural gas-fueled combined-cycle generating unit equipped with state-of-the art air pollution control system. This alternative assumes the same infrastructure development, including construction of approximately 18,000 square feet of administrative facilities/control stations/maintenance facilities/public and shared space within the Glenarm Building, and demolition of the existing Glenarm Building stack, air compressor facility, and restroom. Boilers in the southwestern portion of the building would be removed and the proposed parking area immediately south of the proposed Unit GT-5 would be developed. State Street immediately south of the Glenarm Plant would be closed and a one-acre parcel south of State Street would be incorporated into the Glenarm Plant and modifications would be made to the existing Pump Building and parking area on this parcel. This alternative is intended to reduce the proposed project's significant and unavoidable projectlevel and cumulative GHG impacts.

Project Site Reconfiguration Alternative. The Project Site Reconfiguration Alternative assumes that proposed Unit GT-5 would be constructed in the same location as under the proposed project, directly south of the Glenarm Building. However, instead of locating the proposed centralized control room/administrative center within the Glenarm Building, existing administrative facilities and the B-3 control room on the Broadway Plant would continue to support existing and proposed power generation units on the Glenarm Plant. The employee parking lot proposed south of Unit GT-5 and fronting on Fair Oaks Avenue under the project would not be constructed. The Glenarm Building would not be designated as an essential facility as under the proposed project, and the seismic upgrades required for this designation would not be undertaken. Accordingly, the Glenarm Building would not be restored or become a viable city property again through rehabilitation for administrative offices. The Pump Building south of State Street would still be renovated to serve as a mechanical shop to support the maintenance team for the entire Power Plant,

housing general maintenance, machine work, welding, and storage; and the associated employee parking lot on this parcel would still be constructed. This alternative is intended to avoid or reduce the proposed project's significant and unavoidable land use impacts, and significant but mitigable cultural resource and hazardous materials impacts associated with the proposed construction of the administrative/control room facility within the Glenarm Building and removal of equipment.

5.0 ALTERNATIVES A. ALTERNATIVE 1: NO PROJECT/NO ACTION: CONTINUATION OF EXISTING PRACTICES

1. DESCRIPTION OF THE ALTERNATIVE

The No Project/No Action Alternative assumes that the property would remain in its existing state as there are no known predictable actions, such as an alternative project, that would occur on the site if the proposed project were not approved. Under the No Project Alternative, the existing steam generating Unit B-3, which is located on the Broadway site, would not be decommissioned and would continue to operate as it currently does on an intermittent and as needed basis, approximately 2,000 hours per year. The other four existing units, GT-1, -2, -3 and -4, would also continue to operate at their current levels. PWP would continue to purchase and import power to meet the majority of the demands of its customers.

Under the No Project/No Action Alternative, the approximately 18,000 square-foot administrative/control room would not be constructed in the southeastern portion of the Glenarm Building and no demolition of the existing Glenarm Building stack, combustion exhaust duct work, air compressor facility, and restroom, which are located along the south elevation of the building, would occur. Boilers in the southwestern portion of the building's interior, or boiler room, would not be removed and the proposed parking area immediately south of proposed Unit GT-5 would not be developed. State Street immediately south of the Glenarm Plant, between Fair Oaks Avenue and the Gold Line, would not be closed and a one-acre parcel south of State Street would not be incorporated into the Glenarm Plant. No modifications to and expansion of the existing Pump Building and parking area on this parcel, currently occupied by PWP, would occur.

2. ENVIRONMENTAL IMPACTS

a. Aesthetics

The No Project/No Action Alternative would not result in any changes in the visual character of the power plant property, including views or shade/shadow generation, since no new construction would take place and no operational practices would change. However, it should be noted that the Glenarm Building would continue in its current deteriorating state, and could be vulnerable to substantial damage in the event of a major earthquake. Although the proposed project's aesthetic impacts were determined to be less than significant, impacts under the No Project/No Action Alternative would be reduced compared to those of the project.

b. Air Quality

Under the No Project/No Action Alternative, the existing Unit B-3 would continue to operate for approximately 2,000 hours per year. Unit B-3 was originally built in 1965 and emits air pollutants at substantially higher rates than new power-generating units equipped with Best Available Control Technology (BACT). In particular, the proposed Unit GT-5 would be required to meet the most stringent (lowest) emission level achieved in practice resulting in substantially lower nitrogen oxides (NOx, a precursor to atmospheric ozone formation) emissions than B-3. This alternative would result in local (on-site) NOx emissions consistent with current levels, which are greater on a short-term basis (e.g., hourly or

daily) as compared to the proposed project. On a long-term basis (e.g., annual), this alternative could result in reduced local emissions compared to the proposed project, because the proposed Unit GT-5 is analyzed to operate up to its permitted level of 8,760 hours per year (365 days x 24 hours/day) in contrast to the existing Unit B-3 which historically operates for approximately 2,000 hours per year.

While air quality impacts from the proposed project would be less than significant, as discussed in **Section 4.B**, *Air Quality*, the No Project/No Action Alternative would have greater local air quality impacts in the short term and reduced local air quality impacts in the long term compared to the proposed project.

c. Cultural Resources

Archaeological and Paleontological Resources

Under the proposed project, although the potential to encounter archaeological and paleontological resources on the project site is considered remote, construction activities were determined to result in potentially significant impacts in the event that resources are unexpectedly encountered. Since no project implementation, and therefore no grading and excavation, would occur under the No Project/No Action Alternative, it would have no impacts on archaeological and paleontological resources and impacts would be less than those of the proposed project.

Historical Resources

Under the proposed project, designation of the Glenarm Building as an essential facility as defined in the State Building Code and the proposed construction of 18,000 square feet of administrative facilities/control stations/maintenance facilities/public and shared space within the Glenarm Building would result in potentially significant impacts on historical resources. The proposed removal of the existing boilers within the Glenarm Building for construction of the administrative/control room facility, maintenance facilities, and shared and public space would result in the removal of an associated floor-to-ceiling hallway and floating master gauge, both of which are character-defining features, and therefore considered historically significant. The seismic upgrades required for designation of the Glenarm Building as an essential facility could also result in significant impacts on historical resources. While the proposed project includes mitigation measures that would reduce these impacts to a less than significant level, under the No Project/No Action Alternative the proposed administrative/control room facility, maintenance facilities, and shared and public space would not be constructed and no seismic upgrade of the Glenarm Building would take place. The No Project/No Action Alternative would avoid the loss of the floor-to-ceiling hallway within the boiler room and the floating master gauge, and would avoid any other impacts on historical resources resulting from seismic upgrades, and therefore would avoid the proposed project's significant, but mitigable, impacts on historical resources. However, it should be noted that the proposed seismic upgrades required for an essential facility, which would comply with the most current building codes, would arrest the ongoing deterioration of the building and could increase the ability of the Glenarm Building to withstand a major earthquake. Accordingly, under the No Project/No Action Alternative, the Glenarm Building could remain vulnerable to substantial damage in the event of a major earthquake.

d. Greenhouse Gas Emissions

Unit B-3 was built in 1965 and has an energy efficiency rating of 12 MMBtu/MWh while a newer combinedcycle unit would have an efficiency rating of approximately 7 MMBtu/MWh.¹³ Thus, Unit B-3 results in approximately 70 percent more GHG emissions compared with a newer combined-cycle unit with the same operating characteristics due to efficiency losses alone. Therefore, locally produced GHG emissions would be greater for this alternative as compared to the proposed project for each of the 2,000 hours Unit B-3 operates. This alternative would result in lower on-site emissions annually compared to the proposed project because it is expected to operate only 2,000 hours per year compared to the potential 8,760 hours per year for Unit GT-5.

Power providers operating in California including PWP are subject to CARB's GHG cap-and-trade program, which seeks to lower GHG emissions by reducing GHG allocations (awarded based on current emission levels) in future years. Continued reliance on B-3 under this alternative may be unsustainable within PWP's reducing future GHG allocations. Therefore, this alternative could make it more difficult and expensive for the City to meet its compliance burden under the cap-and-trade program by continuing to utilize B-3, which is less efficient than the proposed GT-5.

As described in **Section 4.D**, *Greenhouse Gas Emissions*, of this Draft EIR, the proposed project was determined to result in a significant and unavoidable contribution to cumulatively significant GHG emissions based on the comparison of GT-5's PTE (8,760 hours per year) and B-3's actual annual GHG emissions (from 2,000 hours per year). Given the energy inefficiency and long start up time of B-3, it is not expected that PWP would substantially increase the operating time of B-3, although CAISO could demand additional local generation if the State-wide grid needed power. The current SCAQMD permit to operate allows continuous annual operation of B-3, and under the No Project/No Action Alternative GHG emissions from 8,760 hours would be substantially greater than from the proposed project.

The No Project/No Action Alternative would result in higher hourly GHG emissions and lower on-site annual GHG emissions as compared to the proposed project. However it could potentially result in increased total annual GHG emissions (sum of emissions from on- and off-site sources) compared to the proposed project by failing to commission a reliable state-of-the-art low-emitting power production unit to be used up to 8,760 hours per year. Impacts are therefore considered potentially greater than those of the proposed project.

e. Hazards and Hazardous Materials

Under the No Project/No Action Alternative, no demolition would take place on the Power Plant site, and no abatement of ACMS or LBPs determined during the Phase II investigation to be present on the project site would be undertaken. Likewise, no known or unknown contaminated soils on the plant site would be removed, treated, and disposed of off-site. The removal of these hazardous materials was determined to be a significant, but mitigable, impact under the proposed project. The No Project/No Action Alternative would avoid the project's impacts altogether, although these materials would remain on-site.

¹³ *PWP*, 2007 Integrated Resource Plan, *January 31*, 2007.

f. Land Use and Planning

As discussed in **Section 4.F**, *Land Use and Planning*, of this Draft EIR, the 125-foot OTSG stack associated with proposed Unit GT-5 would exceed the maximum 56-foot height limit for the project site under existing zoning, and the proposed45-space employee parking lot south of the Glenarm Building would conflict with the South Fair Oaks Specific Plan development standard requiring the placement of parking lots between the main building and the rear property line for new development on Fair Oaks Avenue, or along the property line perpendicular to Fair Oaks Avenue. There is no feasible mitigation to reduce these impacts to a less than significant level, and therefore impacts would remain significant and unavoidable. The No Project/No Action Alternative would not result in the development of a new OTSG stack or employee parking lot. Therefore, the No Project/No Action Alternative would avoid the proposed project's significant and unavoidable land use impacts.

g. Noise

Under the No Project/No Action Alternative, no construction would take place and no changes in the existing operational parameters would occur. Although the proposed project was determined to result in less than significant construction or operational noise impacts, impacts under this alternative would be reduced compared to the proposed project.

h. Water Supply

Under the No Project/No Action Alternative, no new construction or changes in operational practices would occur and water consumption would not increase over existing conditions. Although the proposed project was determined to result in less than significant impacts with respect to water supply, impacts under this alternative would be reduced compared to the proposed project.

3. CONCLUSION AND RELATIONSHIP TO PROJECT OBJECTIVES

With respect to the IRP, the No Project/No Action Alternative would not replace aging and inefficient power generation units at PWP's power plant, and therefore would not achieve the project objectives pertaining to maintaining reliable local power generation to ensure uninterrupted power, the ability to make up for shortfalls in imported power, and reduced reliance on coal power; support and implementation of the IRP; or providing for the mandated capacity (i.e., guarantee of availability) to generate power when required by the CAISO.

The No Project/No Action Alternative would not achieve the project objectives of rehabilitating the Glenarm Building for viable work space for City employees and enabling the Glenarm Building to be designated as an essential facility, since it would preclude any interior improvements and the necessary seismic upgrades to current State Building Codes that would assure it remains operational in an emergency.

The No Project/No Action Alternative would not achieve the project objective of consolidation of administrative facilities and control rooms for existing and proposed power generation units, together with public and shared spaces, within the Glenarm Building, nor would it permit the expansion and renovation of the existing Pump Building to serve as a mechanical shop to support the maintenance team for the entire

Power Plant. For these reasons, this alternative would not maximize use, efficiency, and security of the Power Plant as would the proposed project.

The No Project/No Action Alternative, therefore, would entirely preclude achieving the underlying project purpose of increased reliability of local power generation or any of the eight project objectives defined in **Section 2.0**, *Project Description*, of this Draft EIR.

5.0 ALTERNATIVES B. ALTERNATIVE 2: REDUCED OPERATIONS

1. DESCRIPTION OF THE ALTERNATIVE

The Reduced Operations Alternative assumes installation of the same power generation equipment and infrastructure as under the proposed project; however, the new Unit GT-5 would be limited 2,000 hours of operation per year. The existing steam generating Unit B-3, which is located on the Broadway Plant and currently operates on an intermittent and as-needed basis, would still be decommissioned as under the proposed project. The new Unit GT-5 (GE LM 6000 or Rolls Royce Trent 60) would still replace the existing Unit B-3 with a cleaner and more reliable and efficient natural gas-fueled combined-cycle generating unit equipped with state-of-the art air pollution control system. PWP would be required to import energy from outside sources to meet the remainder of its needs not fulfilled by Unit GT-5.

The Reduced Operations Alternative assumes the same infrastructure development, including seismic upgrades to the Glenarm Building required for essential facility designation, and construction of approximately 18,000 square feet of administrative/control room facilities, maintenance facilities, and public and shared space in the southeastern portion of the Glenarm Building, and demolition of the existing Glenarm Building stack, air compressor facility, and restroom, located along the south elevation of the building. Boilers in the southwestern portion of the building's interior, or boiler room, would be removed and the proposed parking area immediately south of the proposed Unit GT-5 would be developed. State Street immediately south of the Glenarm Plant, between Fair Oaks Avenue and the Gold Line, would be closed and the one-acre parcel south of State Street would be incorporated into the Glenarm Plant. Modifications to the existing Pump Building and associated parking area on this parcel, currently occupied by PWP, would also occur.

PWP currently has a capacity of 200 MW. Units GT-1 and GT-2, rated at 26 WM each, are considered older and inefficient units and are used for standby emergency and peak power generation purposes; moreover, Unit GT-1 is currently under contract for repair and Unit GT-2 is currently out of commission as the result of a fire in October 2012. The two newer units, GT-3 and GT-4, rated at 47 MW each, are relatively efficient simple-cycle units that are employed to generate electricity on as needed basis to meet the City's electricity demand and when called upon by California Independent System Operator (CAISO). Unit B-3, rated at 71 MW, would be replaced by the new Unit GT-5 and is also considered an inefficient unit with a long start time (24 hours) and is generally used if summer temperatures are forecasted to be high for an extended period of time. Unit B-3 has an energy efficiency rating of 12 MMBtu/MWh while a newer combined-cycle unit would have an efficiency rating of approximately 7 MMBtu/MWh.¹⁴ Therefore, replacing Unit B-3 with a newer combined-cycle unit would result in approximately 40 percent less natural gas burned and associated emissions per unit of energy generated. PWP's total capacity is approximately 200 MW.

¹⁴ *PWP*, 2007 Integrated Resource Plan, *January 31*, 2007.

2 ENVIRONMENTAL IMPACTS

a. Aesthetics

Under the Reduced Operations Alternative, only operational parameters of Unit GT-5 would change compared to the proposed project. The project's proposed seismic upgrades of the Glenarm Building for designation as an essential facility, and proposed interior rehabilitation to house City employees, would still be undertaken. Impacts on aesthetics, including visual character, views, and shade/shadow, would be the comparable to those of the proposed project.

b. Air Quality

The proposed project was determined to result in less than significant construction and operational air quality impacts. Under the Reduced Operations Alternative, construction-related air quality impacts would be comparable to the proposed project since the same amount of construction would occur as under the project. Operationally, on an hourly or maximum daily basis, this alternative would function identically to the proposed project and would result in air pollutant emissions similar to the proposed project. Annually, air pollutant emissions for the Reduced Operations Alternative would be less than with the proposed project because it would be limited to 2,000 hours. The Reduced Operations Alternative would therefore have air quality impacts similar to the proposed project.

c. Cultural Resources:

Archaeological and Paleontological Resources

Under the proposed project, although the potential to encounter archaeological and paleontological resources on the project site is considered remote, construction activities were determined to result in potentially significant impacts in the event that resources are unexpectedly encountered. Since only the operational parameters for proposed Unit GT-5 would change under the Reduced Operations Alternative and all construction activities proposed as part of the project would also occur under this alternative, the Reduced Operations Alternative would have potentially significant, but mitigable, impacts on archaeological and paleontological resources and impacts would be comparable to those of the proposed project.

Historical Resources

The location of the existing boilers creates the floor-to-ceiling hallway, which is a character-defining feature. Furthermore, the infrastructure of the boilers supports the floating master gauge, which is also a characterdefining feature. Under this alternative, mitigation measures would be implemented to reduce the impact to a less than significant level, as is the case with the proposed project.

Under the Reduced Operations Alternative, the Glenarm Building would still be designated as an essential facility, and the associated seismic upgrades to the building would still be undertaken. The approximately 18,000 square feet of administrative facilities/control stations/maintenance facilities/shared and public spaces proposed under the project would still be constructed within the Glenarm Building, and the associated removal of the existing boilers would still result in the removal of the associated floor-to-ceiling hallway and floating master gauge, both of which are character-defining features, and therefore historically significant. The seismic upgrades and removal of the boilers would result in significant, although mitigable, impacts on historical resources. Impacts would therefore be comparable to those of the proposed project.

d. Greenhouse Gas Emissions

Under the Reduced Operations Alternative, PWP would maintain the same operating capacity compared to the proposed project; however, it would be prohibited from using the new Unit GT-5 in excess of 2,000 hours per year. While the proposed project would be permitted to operate for up to 8,760 hours per year, there is no requirement that it must do so. The ability to operate continuously throughout the year provides PWP with operational flexibility and system reliability. The Reduced Operations Alternative would result in a loss of operational flexibility and system reliability.

The Reduced Operations Alternative would reduce GHG impacts compared to the proposed project. As described in **Section 4.D**, *Greenhouse Gas Emissions*, of this Draft EIR, the proposed project was determined to result in significant and unavoidable cumulative GHG emissions, conservatively assuming that the increase in use of GT-5 (6,760 hours over current use of Unit B-3) represents net new emissions and not replacement of power and emissions produced elsewhere in the Basin, State or region. As a result, compared to the proposed project, on-site annual GHG emissions resulting from this alternative would be reduced compared to the proposed project and current operations. Thus, the Reduced Operations Alternative would not result in a cumulatively considerable contribution to cumulatively significant impacts.

e. Hazards and Hazardous Materials

The Reduced Operations Alternative would change only the operational parameters of the proposed project by reducing the number of permitted hours of operation of proposed Unit GT-5. All project components proposed under the project would be constructed under this alternative, and therefore construction activities including demolition, abatement of hazardous materials including ACMs and LBP, and remediation of on-site contaminated soils would take place as under the proposed project. Impacts with respect to hazardous materials would be potentially significant but mitigable, and therefore comparable to those of the proposed project.

f. Land Use and Planning

The Reduced Operations Alternative would result in similar significant and unavoidable impacts with respect to land use as compared to the proposed project. As discussed in **Section 4.F**, *Land Use and Planning*, of this Draft EIR, the 125-foot OTSG stack associated with proposed Unit GT-5 would exceed the maximum 56-foot height limit for the project site under existing zoning, and the proposed employee parking lot south of the Glenarm Building would conflict with the South Fair Oaks Specific Plan development standards requiring the placement of parking lots between the main building and the rear property line for new development on Fair Oaks Avenue, or along the property line perpendicular to Fair Oaks Avenue. There is no feasible mitigation to reduce these impacts to a less than significant level, and therefore impacts would remain significant and unavoidable. Impacts would therefore be comparable to those of the proposed project.

g. Noise

Under the Reduced Operations Alternative, the same amount of construction would take place as under the proposed project, and the only change would be in the operational parameters of Unit GT-5. The proposed project was determined to result in less than significant construction or operational noise impacts, and

impacts under this alternative would be slightly reduced compared to the proposed project, since Unit GT-5 would operate a reduced number of hours annually.

h. Water Supply

Under the Reduced Operations Alternative, proposed rehabilitation of the Glenarm Building interior to house City employees and seismic upgrades for essential facility designation of the Glenarm Building would take place as under the proposed project, and the only change compared to the project would be in the operational parameters of Unit GT-5. The proposed project was determined to result in less than significant impacts with respect to water consumption; water consumption under this alternative would be slightly reduced compared to the proposed project, since Unit GT-5 would operate a reduced number of hours annually.

3. CONCLUSION AND RELATIONSHIP TO PROJECT OBJECTIVES

The Reduced Operations Alternative would improve local generation reliability and increase the City's ability to generate power locally, but would do so to a considerably lesser degree than the proposed project. With respect to support and implementation of the IRP, this alternative would replace the existing Unit B-3 with a more efficient unit, but would limits its hours of operation and therefore only partially achieve this objective.

Limitations on the operating hours would reduce the City's ability to provide for mandated capacity (i.e., guarantee of availability) to generate power when required by the CAISO, and therefore this alternative would therefore only partially achieve this objective. Similarly, the limitations on operating hours would only partially achieve the project objective of helping PWP reduce reliance on coal power.

The Reduced Operations Alternative would achieve the project objectives pertaining to rehabilitation of the Glenarm Building and repurposing it as viable work space for City employees, and designating the Glenarm Building as an essential facility, since only power generation operational parameters would be changed under this alternative.

The Reduced Operations Alternative would still achieve the objective of consolidation of new administrative offices, control stations, maintenance facilities, and public and shared space, but it would not maximize the use and efficiency of the facility, since the facility would lose operational flexibility due to the limitations on the operating hours of proposed Unit GT-5. The unit would be prohibited from operating in excess of 2,000 hours per year, even in the case where GT-5 would be the most efficient means of providing power to the City and its customers. Under this condition, PWP could be forced to import power, which could potentially result in an increase in the facility's GHG emissions over existing conditions. As a result, the Reduced Operations Alternative would only partially achieve the objective of maximizing the use and efficiency of the facility.

In summary, the Reduced Operations Alternative would only partially achieve the underlying project purpose of increased reliability of local power generation, and would partially achieve six project objectives and fully achieve two project objectives defined in **Section 2.0**, *Project Description*, of this Draft EIR.

5.0 ALTERNATIVES C. ALTERNATIVE 3: PROJECT SITE RECONFIGURATION

1. DESCRIPTION OF THE ALTERNATIVE

The Project Site Reconfiguration Alternative assumes that proposed Unit GT-5 would be constructed on the Glenarm Plant in the same location as under the proposed project, directly south of the Glenarm Building. However, instead of constructing centralized administrative facilities/control stations/maintenance facilities/public and shared space within the Glenarm Building that would serve existing Units GT-1 through GT-4 and proposed Unit GT-5, existing administrative facilities and the B-3 control room on the Broadway Plant would continue to support existing and proposed power generation units on the Glenarm Plant. The 45-space employee parking lot proposed south of Unit GT-5 and fronting on Fair Oaks Avenue under the project would not be constructed, since there is no other area on the plant site large enough to accommodate the required number of parking spaces (the only other vacant area on the Power Plant site, the area east of the Glenarm Building and north of Units GT-1 and GT-2, are under active lease by Art Center College for Design and may be redeveloped at any time). PWP employees would continue to share the City-owned lot leased to and used by Jacobs Engineering on the southeast corner of Glenarm Street and the Arroyo Seco Parkway.

The Glenarm Building would not be designated as an essential facility/Occupancy Category IV building as under the proposed project, and the seismic upgrades to current State Building Code Standards required for this designation would not be undertaken. Abatement of ACMs and LBP associated with the Glenarm Building would not be undertaken, since no reuse and occupancy of this building would occur under this alternative. Moreover, it is likely that the installation of Unit GT-5 would prevent future seismic upgrades of the Glenarm Building and preclude future designation as an essential facility, since its location immediately south of the Glenarm Building would effectively block future access to the building's interior for the heavy equipment needed for such upgrades. Under either of the two manufacturing configurations being considered, Unit GT-5 would include a new gas turbine, steam turbine, 125-foot OTSG stack, cooling tower, water storage tanks, fuel gas compressors, and air compressor, as well as associated electricity, natural gas, and process water and firefighting water supply infrastructure, and this equipment would occupy most of the area immediately south of the Glenarm Building.

The Pump Building on the one-acre parcel south of State Street would still be expanded and renovated to serve as a mechanical shop to support the maintenance team for the entire Power Plant, housing general maintenance, machine work, welding, and storage, and the associated 14-space employee parking lot on this parcel would still be constructed.

2. ENVIRONMENTAL IMPACTS

a. Aesthetics

Under the Project Site Reconfiguration Alternative, none of the proposed interior rehabilitation of the Glenarm Building to house City employees, seismic upgrades required for essential facility designation, or demolition of exterior Glenarm Building features as proposed under the project would be implemented, since existing administrative facilities and the B-3 control room on the Broadway Plant would continue to support power generation units on the Glenarm Plant. Unit GT-5 would still be installed south of the

Glenarm Building and would partially block views of the building from off-site vantages. The Pump Building on the parcel south of State Street would still be expanded and improved for use as a maintenance facility. Although impacts on aesthetics were determined to be less than significant under the proposed project, impacts under the Project Reconfiguration Alternative would nonetheless be incrementally reduced compared to the proposed project. However, it should be noted that the Glenarm Building would remain in its current deteriorating state, and would be vulnerable to substantial damage in the event of a major earthquake.

b. Air Quality

The proposed project was determined to result in less than significant construction and operational air quality impacts. Under the Project Site Reconfiguration Alternative, construction-related air quality impacts would be reduced compared to the proposed project since the amount of construction would be reduced. However, Unit GT-5 would operate as under the proposed project, and operational air quality impacts would therefore be comparable to those of the project.

c. Cultural Resources

Archaeological and Paleontological Resources

Under the proposed project, although the potential to encounter archaeological and paleontological resources on the project site is considered remote, construction activities were determined to result in potentially significant impacts in the event that resources are unexpectedly encountered. The 45-space employee parking lot proposed as part of the project would not be constructed under the Project Site Reconfiguration Alternative, and the proposed seismic upgrades for the Glenarm Building for designation as an essential facility would not be undertaken, a smaller area would be subject to grading and excavation. Therefore, while the Project Site Reconfiguration Alternative and paleontological resources, impacts would be less than those of the proposed project.

Historical Resources

The Project Site Reconfiguration Alternative would not construct the consolidated administrative facilities, control stations, maintenance facilities, and shared and public spaces within the Glenarm Building that are proposed under the project. Instead, the existing B-3 control room on the Broadway Plant would continue to serve all power generation units on the Glenarm and Broadway Power Plant sites. Since the consolidated administrative/control facilities would not be constructed in the Glenarm Building, the building would not merit designation as an essential facility or undergo related seismic upgrades required for an Occupancy Category IV building, as is proposed under the project. The Glenarm Building would therefore not be restored and would remain in its current deteriorating state, and would not become a viable city facility again through rehabilitation for administrative offices.

Consequently, this alternative would entirely avoid the proposed project's significant, but mitigable, impacts on historical resources resulting from the proposed removal of boilers that support the character-defining floor-to-ceiling hallway and floating master gauge, and any other impacts to historical resources resulting from seismic upgrades.

d. Greenhouse Gas Emissions

Because no new administrative facilities, control stations, maintenance facilities, or shared or public spaces would be constructed in the Glenarm Building, and the existing B-3 Control Room would instead be retrofitted with a control station to support operations of Unit GT-5, the duration and intensity of construction under the Project Site Reconfiguration Alternative would be reduced compared to the proposed project, which would result in an incremental reduction in GHG emissions from construction equipment.

The Project Site Reconfiguration Alternative assumes installation of the same power generation equipment (i.e., Unit GT-5) as the proposed project, and it would operate for the same number of permitted operating hours (8,760). Unit GT-5 (GE LM 6000 or Rolls Royce Trent 60) would, as under the proposed project, replace existing Unit B-3 with a cleaner and more reliable and efficient natural gas-fueled combined-cycle generating unit equipped with state-of-the art air pollution control system. Nonetheless, assuming an increase in operating hours over those of existing Unit B-3 up to its permitted limit of 8,760 hours per year, GHG emissions from operation of Unit GT-5 would be significant and unavoidable at the project and cumulative levels, and the associated impacts would therefore be comparable to those of the proposed project.

e. Hazards and Hazardous Materials

Under the Project Site Reconfiguration Alternative, Unit GT-5 would still be constructed in the same location as under the proposed project, and therefore remediation of contaminated soils determined to be present on at this location in the Phase II investigation performed for the project would still be necessary. However, since no new employee parking lot would be constructed south of Unit GT-5, the volume of contaminated soils to be remediated would be potentially reduced compared to the project.

Under this alternative, no new facilities would be constructed in the Glenarm Building, and the building would therefore not merit designation as an essential facility/Occupancy Category IV building. Consequently, no seismic upgrades would be undertaken for compliance with current State Building Code, as is proposed under the project. No abatement of ACMs or LBP within the Glenarm Building would be required, although ACMS and LBP exist elsewhere on the Plant site and would still require abatement under this alternative. Impacts with respect to hazardous materials, including contaminated soils, ACMs, and LBP, would therefore be significant but mitigable under both the proposed project and this alternative, but would be incrementally reduced under this alternative because of the reduced scope of construction-related remediation and abatement.

f. Land Use and Planning

Under the Project Site Reconfiguration Alternative, proposed Unit GT-5 would be constructed in the same location as under the proposed project, south of the Glenarm Building on the Glenarm Plant. Consequently, this alternative would still introduce a 125-foot OTSG stack to the project site, which would exceed the height limitation under existing zoning, comparable to the proposed project. A variance from the height restriction specified in the Zoning Code would be required, as under the proposed project.

However, the 45-space employee parking lot proposed south of Unit GT-5 and fronting on Fair Oaks Avenue would not be constructed, and PWP employees would instead continue to share the City parking lot leased to

Jacob's Engineering at the corner of Glenarm Street and the Arroyo Seco Parkway. With elimination of this project component, this alternative would fully comply with the South Fair Oaks Specific Plan Development Standard 3.3.3-B.4, Parking and Loading, which requires new parking facilities to be located between an onsite building and the rear property line. No variance from the Specific Plan development standard for parking would be required. Overall, land use impacts under this alternative would be reduced compared to the proposed project.

g. Noise

Under the Project Site Reconfiguration Alternative, no interior rehabilitation of the Glenarm Building to house City employees, or seismic upgrades necessary for essential facility designation, would be undertaken. The Pump Building would still be expanded and improved to house maintenance facilities. Unit GT-5 would still be installed and operated the same number of hours as under the proposed project. Although construction and operational noise impacts under the proposed project were determined to be less than significant, impacts under this alternative would still be incrementally reduced compared to the proposed project since the amount of construction would be reduced,.

h. Water Supply

Under the Project Site Reconfiguration Alternative, no interior rehabilitation of the Glenarm Building to house City employees and the current offices and control rooms would remain in operation. The Pump Building would still be expanded and improved to house maintenance facilities. Unit GT-5 would still be installed and operated the same number of hours as under the proposed project. Although water supply impacts under the proposed project were determined to be less than significant, impacts under this alternative would still be very slight reduced compared to the proposed project since the Glenarm Building improvements would not be implemented. However, the vast majority of water consumption associated with the proposed project is related to the operation of Unit GT-5, and water consumption by Unit GT-5 under the Project Site Reconfiguration Alternative would be comparable to the proposed project.

3. CONCLUSION AND RELATIONSHIP TO PROJECT OBJECTIVES

Since the Project Site Reconfiguration Alternative would still construct and operate Unit GT-5, similar to the proposed project, it would fully achieve the five project objectives pertaining to improved local generation reliability; increased City ability to generate power locally and reduced reliance on coal power; support and implementation of the IRP; and the City's ability to provide for mandated capacity (i.e., guarantee of availability) to generate power when required by the CAISO.

The Project Site Reconfiguration Alternative would still renovate the Pump Building to serve as a mechanical shop, but it would not consolidate new administrative offices, control stations, public and shared space, and maintenance facilities within the Glenarm Building, and instead would retrofit the B-3 Control Room on the Broadway Plant to support Unit GT-5. As a result, the Project Site Reconfiguration Alternative would not meet the project objective of rehabilitating the Glenarm Building and repurposing it into viable work space for City employees, or the objective of enabling designation of the Glenarm Building as an essential facility, and would only partially achieve the objective of maximizing the use and efficiency of the facility.

The Project Site Reconfiguration Alternative, therefore, would fully achieve five project objectives, partially achieve one project objective, and would not achieve two project objectives defined in **Section 2.0**, *Project Description*, of this Draft EIR.

5.0 ALTERNATIVES D. ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The State CEQA Guidelines require the identification of an environmentally superior alternative to the proposed project and, if the environmentally superior alternative is the No Project Alternative, the identification of an environmentally superior alternative should be from among the remaining alternatives.¹⁵ Selection of an environmentally superior alternative is based on an evaluation of the extent to which the alternatives would reduce or eliminate the significant impacts associated with the project, and on a comparison of the remaining environmental impacts of each alternative. The relative environmental characteristics of the proposed project, the No Project Alternative, Reduced Operations Alternative, and Project Site Reconfiguration Alternative are summarized in **Table 5-1**, *Comparison of Alternatives and Proposed Project*.

Of the alternatives analyzed in this Draft EIR, the No Project/No Action Alternative is considered the environmentally superior alternative, since it would entirely avoid the project's significant and unavoidable land use impacts; would entirely avoid the project's significant but mitigable impacts on historical, archaeological, and paleontological resources as well as its significant but mitigable hazardous materials impacts; and would entirely avoid the project's less than significant aesthetic, air quality, and water supply impacts. The No Project/No Action Alternative, however, would result in greater significant and unavoidable GHG impacts, and would not meet any of the project objectives.

Since the No Project/No Action Alternative is determined to be the environmentally superior alternative, an alternative selection is required under CEQA. The Project Site Reconfiguration Alternative would entirely avoid the project's significant and unavoidable land use impacts, and would reduce the proposed project's significant but mitigable impacts on cultural resources, including archaeological, paleontological, and historical resources, and hazardous materials. This alternative would only slightly reduce the construction-related GHG emissions and would not avoid the project's significant operational project-level or cumulative impacts with respect to GHG emissions. Nonetheless, the Project Site Reconfiguration Alternative is the environmentally superior alternative amongst the alternatives analyzed.

However, the Project Site Reconfiguration Alternative would only partially achieve the objective of maximizing the use and efficiency of the facility, and would not achieve the project objective of designating the Glenarm Building as an essential facility, since only operational parameters would be changed under this alternative. Moreover, the installation of Unit GT-5, including a new gas turbine, steam turbine, 125-foot OTSG stack, cooling tower, water storage tanks, fuel gas compressors, and air compressor, as well as associated electricity, natural gas, and process water and firefighting water supply infrastructure, would likely prevent future seismic upgrades of the Glenarm Building and preclude its future designation as an essential facility, since the location of Unit GT-5 immediately south of the Glenarm Building would effectively block future access to the building's interior for the heavy equipment needed for such upgrades.

¹⁵ CEQA Guidelines, Section 15126.6(e)(2).

Table 5-1

Comparison of Alternatives and Proposed Project

Project Phase or		Alternative 1 No Project/No Action: Continuation of		Alternative 2	Alternative 3 Project Site			
	Project Impact	Existing Practices	hatias	Reduced Operations	Reconfiguration			
Aestnetics								
Construction	Less Than Significant	Less (No Impact)		Similar	Less			
Air Quality								
Construction	Less Than Significant	Less (Less Than Significant)		Similar	Less			
Operation	Less Than Significant	Greater (Short Term) (Potentially Significant) Less (Long Term) (Less Than Significant)		Similar (Short Term) Less (Long Term)	Similar (Short and Long Term)			
Historical Resources								
Construction	Less Than Significant with Mitigation	Less (No Impact)		Similar (Less Than Significant with Mitigation)	Less (Less Than Significant with Mitigation)			
Paleontological and Archaeological Resources								
Construction Archaeological Resources	Less Than Significant with Mitigation	Less (No Impact)		Similar (Less Than Significant with Mitigation)	Less (Less Than Significant with Mitigation)			
Construction: Paleontological Resources	Less Than Significant with Mitigation	Less (No Impact)		Similar (Less Than Significant with Mitigation)	Less (Less Than Significant with Mitigation)			

Project Phase or		Alternative 1 No Project/No Action: Continuation of	Alternative 2	Alternative 3 Project Site			
Cumulative Impacts	Project Impact	Existing Practices	Reduced Operations	Reconfiguration			
Greenhouse Gases							
Cumulative GHG Emissions	Significant and Unavoidable	Less (Less Than Significant)	Less (Less Than Significant)	Similar (Significant and Unavoidable)			
Compliance with GHG Emission Reduction Plans	Less Than Significant	Greater (Less Than Significant)	Similar	Similar			
Hazards							
Construction	Less Than Significant with Mitigation	Less (No Impact)	Similar (Less Than Significant with Mitigation)	Less (Less Than Significant with Mitigation)			
Land Use and Planning							
Operation	Significant and Unavoidable	Less (Avoids Project Impacts)	Similar (Significant and Unavoidable)	Less (Significant and Unavoidable)			
Noise							
Construction	Less Than Significant	Less (Avoids Project Impacts)	Similar (Less Than Significant)	Less (Less Than Significant)			
Operation	Less Than Significant	Less (Avoids Project Impacts)	Less (Less Than Significant)	Similar (Less Than Significant)			
Water Supply							
Operation	Less Than Significant	Less (Less Than Significant)	Less (Less Than Significant)	Less (Less Than Significant)			
Source: PCR Services Corporation, 2012.							