EXECUTIVE SUMMARY

This Draft Environmental Impact Report (Draft EIR) has been prepared pursuant to the requirements of the California Environmental Quality Act (CEQA) with respect to the proposed Glenarm Power Plant Repowering Project ("the project"). In accordance with CEQA Guidelines Section15123, this Section of the EIR provides a brief description of the project; identification of significant effects and proposed mitigation measures or alternatives that would reduce or avoid those effects; areas of controversy known to the lead agency; and issues to be resolved including the choice among alternatives and whether and how to mitigate the significant effects.

1. PROPOSED PROJECT

In 2006, the California State Legislature adopted Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its greenhouse gas (GHG) emissions to 1990 levels by 2020. Under AB 32, the California Air Resources Board (CARB) has primary responsibility for establishing the reduction target and reducing the State's greenhouse gas emissions. In 2008, as part of its AB 32 responsibilities, CARB adopted the *Climate Change Scoping Plan*, which outlines the State's strategy to achieve the greenhouse gas reduction target. As part of the *Scoping Plan*, CARB determined that California will need to reduce its greenhouse gas emissions by approximately 28.5 percent from the State's projected 2020 emissions level. AB 32 represents the first enforceable Statewide program to limit greenhouse gas emissions from all major industries, including the electricity sector, with penalties for noncompliance.

In 2011, the City of Pasadena adopted an update to the energy Integrated Resources Plan (IRP) of 2009, which provides a blueprint for the Pasadena Department of Water and Power (PWP) for ensuring reliable, environmentally responsible electricity service, competitive rates, and energy independence through 2030. The IRP reconfigures PWP's existing electricity portfolio to significantly reduce greenhouse gas (GHG) emissions through the transition to a mix of renewable energy resources and replacing existing Unit B-3 with a new, local natural gas-fueled, combined-cycle electricity generating unit of equivalent size, equipped with a state-of-the-art air pollution control system. Key objectives of the Preferred Resource Plan presented in the IRP include reducing the import of coal-fired power to Pasadena by at least 35 megawatts (MW) and replacing existing aging and inefficient local generating units at PWP's Power Plant with a new, more reliable and efficient, local natural-gas fired combined-cycle generating unit equipped with state-of-the-art air pollution control system. This, together with related infrastructure improvements, constitutes the Glenarm Power Plant Repowering Project.

The City's Power Plant is located at 72 East Gleanrm Street in the City of Pasadena. The Power Plant property is bounded by Glenarm Street on the north, State Street and the Metro Gold Line tracks on the south, State Route 110 (SR 110, the Arroyo Seco Parkway) to the east, and Fair Oaks Avenue to the west. Regional access to the project site is provided by the Arroyo Seco Parkway.

The Power Plant consists of two groups of generating facilities separated by the Metro Gold Line tracks: the Glenarm Plant to the west of the tracks and the Broadway Plant to the east. The Glenarm facility is approximately 6.52 acres and is developed with the Glenarm Building and associated electric fountain (i.e., electric-powered water fountain), a City-designated local historic monument; Pacific Electric Railway

Company (PERC) Substation No. 2, a City designated local historic landmark; and four natural gas turbine generators (Units GT-1 through GT-4). The Broadway Plant is approximately 6.10 acres and is developed with two decommissioned steam-generating units (B-1 and B-2) and one active unit (B-3); three cooling towers; two aboveground aqueous ammonia storage tanks; three aboveground water tanks; two control rooms; and a 1.50-acre City parking lot currently leased to and used by Jacob's Engineering and shared by PWP employees.

In order to fulfill the IRP objectives of producing reliable, efficient, and environmentally responsible electricity, PWP proposes the following:

- Replacement of steam generating Unit B-3 on the Broadway Plant with a new combined-cycle 71 MW (gross) power generating unit, Unit GT-5, on the Glenarm Plant, south of the Glenarm Building. Unit GT-5 would include a new gas turbine, steam turbine, once-through steam generator (OTSG), wet-type cooling tower, water storage tanks, electric-powered fuel gas compressors, and an electric-powered air compressor. Unit GT-5 would also require a 125-foot-tall stack, similar to existing stacks for Units GT-1 through GT-4.
- Construction of an approximately 18,000-square-foot administrative/control room facility for existing and proposed power generation units in the southeastern portion of the existing Glenarm Building. The existing Glenarm Building stack, air compressor facility, and restroom, located along the south elevation of the building, would be demolished. Boilers in the southwestern portion of the building's interior would be removed. A surface parking area would provide 45 spaces. No modification of the existing PERC Substation No. 2 is proposed.
- Designation of the Glenarm Building as an essential facility to reflect the fact that its continuous operation in a major emergency is critical for power generation management at the Power Plant and to support other essential City facilities and functions.¹ To enable this designation, PWP proposes voluntary seismic retrofit work to bring the Glenarm Building into compliance with current State Building Code essential facility structural requirements. This includes seismic safety enhancements; plumbing, mechanical, electrical, and fire/life safety improvements, hazardous materials abatement; and tenant improvements/interior renovations.
- Reconfiguration in place one of the two existing aboveground aqueous ammonia tanks and associated piping and other equipment on the Broadway Plant.
- Closure of the State Street cul-de-sac that terminates at the Metro Gold Line tracks immediately south of the Glenarm Plant, between Fair Oaks Avenue and the Metro Gold Line, and incorporation of a one-acre parcel south of State Street into the Glenarm Plant. The existing 4,000-square-foot Pump Building on this parcel currently occupied by PWP would be expanded to approximately 6,000 square feet and modified to house shops for general maintenance, machine work, and welding. Surface parking for 14 vehicles would be provided on this parcel.

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.

 Rerouting or relocation of storm drains, underground water lines, electrical lines, and other utilities; removal of existing mechanical equipment; and abatement of asbestos-containing materials (ACMs) and lead-based paint (LBP) as necessary. Remediation of contaminated soil, within areas of potential disturbance, for regulatory compliance.

Project construction is anticipated to take up to 23 months following project approval.

2. CEQA BACKGROUND

The City of Pasadena ("the City") has the primary responsibility for carrying out or approving the project and is therefore, the Lead Agency with principle responsibility for preparing documents required by CEQA. To date, several steps of the public environmental review process have been completed. A Notice of Preparation (NOP) for a Draft EIR regarding the Project was circulated by the City in September 2011, based on an Initial Study which determined that implementation of the project could result in potentially significant impacts to the environment. Copies of the NOP and public agency comments received during the 30-day public comment period for the NOP are provided in **Appendix A** of this Draft EIR. In addition, in accordance with Public Resources Code Section 21083.9, a public scoping meeting was held for the project on October 6, 2011 to obtain input as to the scope and content of the environmental information about the proposed project that should be explored in the EIR. Based on the results of the Initial Study and comments received during the public review period, issues regarding aesthetics, air quality, cultural resources (historic resources only), GHG emissions, hazards and hazardous materials, land use and planning, noise and water supply were identified as having potentially significant impacts. As such, these issues are evaluated in detail in this Draft EIR.

3. SIGNIFICANT AND UNAVOIDABLE ENVIRONMENTAL IMPACTS

Unavoidable significant impacts can occur as a result of project impacts, cumulative impacts, and as a secondary effect from the implementation of a mitigation measure. Based on the analysis contained in **Section 4.0**, *Environmental Impact Analysis*, the Project will result in the following significant and unavoidable environmental impacts.

- Greenhouse Gases (Project and Cumulative) The proposed project would result in an increase in GHG emissions that exceed the South Coast Air Quality Management District (SCAQMD) mass emission thresholds. Furthermore, the City does not directly control the operations of the Intermountain Power Project (IPP) and there is no expected reduction in IPP's future operations or emissions. Therefore, on a project-level and cumulative basis, the impacts of the Unit GT-5 repower would remain significant after mitigation.
- Land Use and Planning 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 parking lot south of the Glenarm Building and fronting onto Fair Oaks Avenue would conflict with 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 less than significant, and therefore impacts would remain significant and unavoidable.

4. AREAS OF CONTROVERSY/ISSUES TO BE RESOLVED

The following summarizes the environmental concerns raised in response to the NOP (the numerical reference in parenthesis is the EIR section in which the analysis is provided) and at the public scoping meeting. The NOP comments and scoping meeting materials are contained in Appendix A:

- Potential construction and operational air quality impacts associated with the proposed improvements at the Power Plant (refer to **Section 4.B**, *Air Quality*, of this Draft EIR);
- Adequacy of existing wastewater infrastructure (sewer lines) and the Whittier Narrows Water Reclamation Plant (WRP) to support the proposed project under currently approved design capacities (refer to Section 6.0, Other Environmental Considerations, of this Draft EIR);
- Project-related traffic impacts to local streets and intersections, as well as freeways, including identified Congestion Management Program (CMP) facilities (refer to Section 6.0, Other Environmental Considerations, of this Draft EIR);
- Potential impacts to Metro and municipal transit facilities. Specifically, construction and operational safety impacts associated with the adjacent Metro facilities. Potential for conflict with the adjacent Metro right-of-way, including impacts to the electrified Overhead Catenary System (OCS) (refer to Section 2.0, Project Description, Section 4.E, Hazards and Hazardous Materials, and Section 6.0, Other Environmental Considerations, of this Draft EIR);
- Potential for impacts to unknown/buried Native American cultural resources (refer to Section 6.0, *Other Environmental Considerations*, of this Draft EIR); and
- Implementation of the environmental review process in accordance with the *CEQA* (refer to this *Executive Summary*, **Section 1.0**, *Introduction*, and **Section 2.0**, *Project Description*, of this Draft EIR).

5. ALTERNATIVES

The *CEQA Guidelines* require an EIR to "describe the range of reasonable alternatives to the project, or to the location of the project, which will feasibly attain most of the basic objectives of the project but will avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." The *CEQA Guidelines* direct that selection of alternatives be guided by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice.

As described in detail in **Section 5.0**, *Alternatives*, of this Draft EIR, three alternatives to the project were identified: the mandatory No Project/No Action: Continuation of Existing Practices Alternative; a Reduced Operations Alternative; and a Project Site Reconfiguration Alternative. Based on an analysis of these alternatives, an environmentally superior alternative is identified. The alternatives, as well as the identified environmentally superior alternative, are summarized below.

a. No Project/No Action: Continuation of Existing Practices

The No Project/No Action Alternative assumes that the property would remain in its existing state as there are no known predicable 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 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 its contractual entitlement of coal-fired power from the IPP

facility. In addition, this alternative assumes no new construction for the administrative/control room and parking areas and no demolition activities for the removal of boilers in the southwest portion of the Glenarm Building. Furthermore, 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.

The No Project/No Action Alternative would have significant and unavoidable impacts regarding GHG emissions, similar to the proposed project. Although the No Project Alternative would not generate new GHG emissions, this alternative would not be consistent with plans adopted for the purpose of reducing statewide GHG emissions. Conversely, the proposed project would be consistent with such plans but would result in significant and unavoidable project-level and cumulative GHG emissions. The No Project/No Action Alternative would avoid significant and unavoidable land use impacts associated with the proposed project. Impacts on aesthetics, air quality, cultural resources, hazards and hazardous materials, noise, and water supply associated with the proposed project would be avoided under this alternative. However, the No Project/No Action Alternative would not achieve the underlying project purpose of increased reliability of local power generation, or any of the associated project objectives defined in **Section 2.0**, *Project Description*, of this Draft EIR.

b. 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 operational hours per year, similar to existing Unit B-3's current annual operating hours. Under this alternative, existing steam generating Unit B-3, which is located on the Broadway Plant would be decommissioned. Similar to the proposed project, the new Unit GT-5 (GE LM 6000 or Rolls Royce Trent 60) would replace existing Unit B-3 with a cleaner and more reliable and efficient natural gas-fired combinedcycle 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. The State Street cul-de-sac that terminates at the Metro Gold Line tracks immediately south of the Glenarm Plant would be closed and a oneacre 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 project-level and cumulative GHG impacts.

The Reduced Operations Alternative would have significant and unavoidable project-level and cumulative impacts regarding GHG emissions, which overall are similar to the proposed project. Under the Reduced Operations Alternative, it is likely that PWP would import more coal-generated power for any shortfalls beyond the 2,000-hour operational limit and once the City reduces the amount of power purchased from IPP, IPP is likely to sell its that coal-produced power to other entities. Furthermore, this alternative would be less consistent with plans adopted for the purpose of reducing GHG emissions compared to the proposed project. The Reduced Operations Alternative would have the same significant and unavoidable land use impacts as the proposed project. Impacts on aesthetics, cultural resources, and hazards and hazardous materials under

this alternative would be similar to the proposed project, while impacts on air quality, noise, and water supply would be reduced. However, 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.

c. 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. 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.

The Project Site Reconfiguration Alternative would have the same significant and unavoidable project-level and cumulative impacts relative to GHG emissions as the proposed project because of the increase in operating hours over those of the existing Unit B-3. The Project Site Reconfiguration Alternative would reduce land use impacts compared to the proposed project, since no variance from Specific Plan development standards for parking would be required. However, this alternative would still have the same significant and unavoidable land use impacts as the proposed project associated with the 125-foot OTSG stack, which would exceed the maximum permitted height limit and would require a variance from the height restrictions specified in the Zoning Code. This alternative would avoid impacts on historic resources identified for the proposed project, since the consolidated administrative/control facilities would not be constructed in the Glenarm Building. The Project Site Reconfiguration Alternative would also reduce impacts on archaeological and paleontological resources and hazards and hazardous materials compared to the proposed project. Impacts on aesthetics, air quality, noise, and water supply would be similar to the proposed project. The Project Site Reconfiguration Alternative would generally achieve the underlying project purpose of increased local power generation reliability and would fully achieve three project objectives, partially achieve one project objective, and would not achieve two Project Objectives.

e. Environmentally Superior Alternative

Section 15126.6(e)(2) of the *CEQA Guidelines* indicates that an analysis of alternatives to a proposed project shall identify an environmentally superior alternative among the alternatives evaluated in an EIR. The *CEQA Guidelines* also state that should it be determined that the No Project Alternative is the environmentally superior alternative, the EIR shall identify another environmentally superior alternative among the remaining alternatives. With respect to identifying an environmentally superior alternative among those

analyzed in this Draft EIR, the range of feasible alternatives considered includes Alternative 1, No Project/No Action: Continuation of Existing Practices, and Alternative 2, Project Site Reconfiguration.

Since the No Project/No Action: Continuation of Existing Practices Alternative was determined to be the environmentally superior alternative, an alternative selection is required under CEQA. Alternative 2, the Project Site Reconfiguration Alternative, would reduce the project's significant and unavoidable land use impacts and significant but mitigable impacts on cultural resources, including archaeological, paleontological, and historical resources, and hazardous materials. This alternative would not, however, avoid or reduce the project's significant 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 meet 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.

6. SUMMARY OF ENVIRONMENTAL IMPACTS

This section provides a summary of impacts, mitigation measures, and impacts after implementation of the mitigation measures associated with development of the project. The summary is provided by environmental issue area below in **Table ES-1**, *Summary of Project Impacts and Mitigation Measures*.

Table ES-1

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
A. AESTHETICS		
Views	No mitigation measures are necessary.	Less Than Significant Impact
Short-term Construction		
During construction, the project site's visual appearance would be altered due to site preparation, excavation and grading, and the construction of power generation unit and auxiliary facilities. Temporary construction activities would be visible to adjacent residences, motorists, and passengers on the Metro Gold Line, even with the installation of temporary construction fencing to screen on-site activities from street-level views. These temporary changes are not anticipated to result in a substantial alteration to the visual character of the site nor degrade scenic views. Therefore, construction-related aesthetic impacts to scenic vistas would be less than significant.		
Visible construction activities would also include truck traffic to and from the site for concrete and material deliveries and haul trips for excavated earth materials. However, the impact of construction trucking would not significantly impact the visual quality of the area, since Fair Oaks Avenue currently is designed to accommodate trucks incidental to construction and deliveries. Therefore, construction traffic-related visual impacts to scenic vistas are considered less than significant.		
Operation	No mitigation measures are necessary.	Less Than Significant Impact
The placement and operation of the proposed GT-5 Unit and associated 125-foot OTSG would not impact views of the Glenarm Building or PERC		

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
Substation No. 2. Furthermore the placement and operation of the GT-5 Unit would not impact panoramic views of more distant ridgelines primarily due to the existing industrial structures on the project site and surrounding mid- and high- rise development. In addition, the proposed alterations to the Glenarm Building would not detract from the overall historical significance of the building. Therefore, impacts to a scenic vista as a result of project development or modifications to the Glenarm Building would be less than significant.		
Visual Quality	No mitigation measures are necessary.	Less Than Significant Impact
Implementation of the proposed project would result in development of additional industrial structures related to the GT-5 Unit which would include the 125-foot OSTG stack. The GT-5 Unit and stack would be similar in height and scale to the existing Units GT-1 through GT-4 on the Power Plant property. The industrial structures would be similar in size and scale to nearby adjacent industrial structures and would not introduce a new land use or visual element that would vary greatly from the current surroundings. Proposed changes to the Glenarm Building would not alter the historic integrity of the building and no alterations to the electric fountain, and PERC Substation No. 2 are proposed as part of the project. Therefore, the proposed project's impacts on the visual character or visual quality of the project site and its surroundings would be less than significant.		
Light and Glare	No mitigation measures are necessary.	Less Than Significant Impact
Proposed new lighting would be oriented and shielded so that direct glare and reflections are		

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
confined to the maximum extent feasible within the boundaries of the site. Therefore, impacts attributable to project-induced artificial lighting would be less than significant.		
New industrial structures associated with the GT-5 Unit, modifications to the facades of the Glenarm Building, and modifications to the existing Pump Building would be constructed with materials that are not notably reflective. Therefore, potential glare impacts from the proposed project would be less than significant.		
The proposed project would be consistent with the land use and urban form policies of the Pasadena General Plan and South Fair Oaks Specific Plan. Therefore, impacts with respect to conformance with the regulatory provisions of the General Plan and Specific Plan would be less than significant.	No mitigation measures are necessary.	Less Than Significant
Project implementation would not shade off-site shadow-sensitive residential uses at any time between the hours of 9:00 a.m. and 3:00 p.m. during the winter solstice. Therefore, shade/shadow impacts would be less than significant.	No mitigation measures are necessary.	Less Than Significant
B. AIR QUALITY		
Conflict with AQMP	No mitigation measures are necessary.	Less Than Significant
The proposed project would be consistent with the implementation of applicable air quality plans through compliance with the applicable SCAQMD regulations, programs, and policies. The proposed project does not result in new employment, and therefore would not conflict with any growth projections presented in the 2007 AQMP. Furthermore, construction and operation of the		

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
proposed project does not result in ambient levels in excess of applicable federal air quality standards. Therefore, the project would not conflict with or obstruct the implementation of the 2007 AQMP and impacts would be less than significant.		
Construction Emissions	No mitigation measures are necessary.	Less Than Significant
Construction of the proposed project would result in temporary increases in air pollutants. Emissions from the soil remediation, demolition, and construction phases are not predicted to exceed regional daily mass emission or localized significance thresholds. Commissioning emissions would exceed SCAQMD daily mass emission thresholds for VOC, NOx, CO and PM _{2.5} . Air dispersion modeling conducted to determine if a significant impact would occur at nearby sensitive receptors, demonstrated that no violations of applicable short-term ambient air quality standards would occur during commissioning. Based on the above, regional and local construction emissions would not violate an air quality standard and would not contribute significantly to an existing or projected air quality violation. Project impacts from constructions would be less than significant.		
Operation Emissions		
Two different configurations are being considered for Unit GT-5: GE LM 6000 and Rolls-Royce Trent 60. Maximum daily operational VOC, NOx, CO, and SOx emissions decrease compared to existing conditions (Unit B-3). The increase in PM _{2.5} emissions from normal operation of the GE LM 6000 exceeds SCAQMD daily mass emission thresholds. Although emissions of PM ₁₀ also increased, the incremental increase is not predicted		

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
to exceed applicable SCAQMD daily mass emission thresholds. Project specific air dispersion modeling demonstrated that the increases in daily maximum regional and local emissions from operations would not violate an air quality standard and would not contribute significantly to an existing or projected air quality violation. Therefore, project impacts from operations are less than significant.		
Increase in Criteria Pollutant	No mitigation measures are necessary.	Less Than Significant
Construction		
The SoCAB is currently in non-attainment for ozone, PM_{10} , and $PM_{2.5}$. As stated above, the emissions from construction of the project are not predicted to exceed any applicable SCAQMD regional or local impact threshold. Commissioning emissions would exceed the SCAQMD daily mass emission thresholds for VOC, NOx, and $PM_{2.5}$. Project-specific construction specific air dispersion modeling demonstrated that NOx, and $PM_{10}/PM_{2.5}$ emissions do not result in ambient concentrations which exceed applicable National Ambient Air Quality Standards (NAAQS) or California Ambient Air Quality would not result in considerable cumulative concentration and would result in a less than significant impact for construction emissions.		
<u>Operation</u>		
Normal maximum daily operations results in decreases in ozone precursors, but increases in PM_{10} and $PM_{2.5}$ emissions. Only the potential increase in daily $PM_{2.5}$ emissions from the GE LM 6000 would exceed the SCAQMD daily mass emission threshold. Project specific air dispersion		

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
modeling demonstrated that $PM_{2.5}$ emissions do not result in ground level concentrations in excess of applicable NAAQS or CAAQS. Therefore, operation of the project would not result in a cumulatively considerable net increase of criteria pollutants for which the project is in non-attainment. The proposed project would result in a less than significant impact for operational emissions.		
Toxic Air Contaminants	No mitigation measures are necessary.	Less Than Significant
Construction		
The greatest potential for construction-generated toxic air contaminant (TAC) emissions would be related to diesel particulate emissions associated with heavy equipment operations during grading and excavation activities. Given the relatively short-term construction schedule of the proposed project, construction would not result in a long- term substantial source of TAC emissions with no residual emissions after construction and corresponding individual cancer risk. As such, project-related toxic emission impacts during construction would be less than significant.		
<u>Operation</u>		
Based on the results of a Health Risk Analysis (HRA) conducted to evaluate the carcinogenic risks to residents and workers resulting from exposure to localized sources of TACs during operation of the project, operation of the proposed project would not exceed established threshold criteria. Furthermore, potential localized air toxic impacts from on-site sources of diesel particulate emissions would be minimal since only a limited number of heavy-duty trucks would access the project site		

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
(deliveries, trash removal, etc.), and the trucks that do visit the site would not idle on the project site for extended periods of time. Therefore, the proposed project is not predicted to result in exposure of sensitive receptors to substantial pollutant concentrations and impacts would be less than significant.		
Odors	No mitigation measures are necessary.	Less Than Significant
<u>Construction</u>		
Potential sources that may emit odors during construction activities include the use of architectural coatings and solvents. SCAQMD Rule 1113 limits the amount of volatile organic compounds from architectural coatings and solvents. Via mandatory compliance with SCAQMD Rules, no construction activities or materials are proposed which would create objectionable odors. Therefore, no impact would occur.		
<u>Operation</u>		
Operation of the proposed project would not essentially change from current operations. Odor complaints have been received periodically by the public and PWP has determined that the cause was small quantities of natural gas which posed no health or safety concern to the plant or the public. No new sources of odors are proposed. Therefore, no impact would occur from operations.		
C. CULTURAL RESOURCES		
Glenarm Building The Glenarm Building and adjacent electric fountain collectively constitute a City of Pasadena-	Mitigation Measure CULT-1: Recordation and Photography. Prior to removal of the boilers, a Historic American Buildings Survey (HABS) level III recordation shall be prepared. The boilers, their	Less Than Significant

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
designated historic monument. The proposed project would include changes to the interior and exterior of the Glenarm Building, including seismic upgrades necessary for designation of the buildings as an essential facility, the construction of an 18,000-square-foot administrative/control room facility, shared and public space, insertion of new windows within the southern and eastern exterior of the building, the removal of asbestos-containing materials (ACM) and removal/encapsulation of lead-based paint (LBP), and the removal of asbestos-coated boilers. The proposed project does not fully comply with the Secretary of the Interior's Standards, since the removal of the boilers would result in the loss of a character-defining feature. This is a potentially significant impact. There is no new construction or rehabilitation planned for the electric fountain, and, therefore, no impacts to this resource are anticipated.	infrastructure, and the hallway created by the boilers shall be documented in as-built drawings, large format black-and-white photographs, and a written narrative in accordance with HABS requirements. Completion of the HABS level III recordation of the boilers should be implemented prior to their removal and before commencement of construction activities. This documentation shall be prepared by a qualified architectural historian or historic architect and a photographer experienced in Historic American Building Survey (HABS) photography. Original archival prints shall be submitted to the Library of Congress, the California Office of Historic Preservation, the City of Pasadena Planning and Development Department and the Pasadena Public Library. Furthermore, copies of the Photographs shall be used in the Mitigation Measure C-2 display.	
	Mitigation Measure CULT-2: Interpretative Architectural Exhibit. An interpretive exhibit displaying the original layout and operation of the floor-to-ceiling hallway shall be constructed in the location of the existing character-defining hallway. This interpretive display shall be created with the assistance of a qualified architectural historian, historic architect, or historic preservation professional who satisfies the Secretary of the Interior's Professional Qualification Standards for History, Architectural History, or Architecture, pursuant to 36 CFR 61. Features of the hallway exhibit shall include the control panels, burner fronts, and the floating master gauge in their original location. If the metal panels supporting the burner fronts are destroyed during the demolition of the	Less Than Significant

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
	boilers, new in-kind panels shall be constructed. If the steel columns and beam supporting the floating gauge are destroyed during the demolition of the burners, new in-kind supports for the gauge shall be constructed. HABS photos taken before the demolition of the burners shall be displayed as part of the exhibit.	
	Mitigation Measure CULT-3: Demolition Monitoring. Due to the complexity of the demolition of the burners, potential damage may occur to historic character-defining features of the Glenarm Building. The proposed project shall be designed to avoid the potential for damage to historic fabric and features. Demolition plans shall be prepared for the proposed project and reviewed by a qualified preservation consultant. The project shall also be conditioned to require construction monitoring by a qualified preservation consultant, to ensure full conformance to the Standards with regard to the proposed project, and to ensure that the appropriate preservation treatment for any unanticipated preservation issues encountered during demolition/construction is properly completed.	Less Than Significant
Pacific Electric Railway Company (PERC)Substation No. 2PERC Substation No. 2 is a City of Pasadena- designated historic landmark and therefore is considered a historic resource under CEQA. The proposed project would close the on-site portion of State Street and incorporate the one-acre parcel to the south into the Glenarm Plant. This constitutes only a slight change in the setting of the PERC Substation. No new construction on or adjacent to	No mitigation measures are necessary.	Less Than Significant

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
impacts on the PERC Substation would be less than significant.		
Archaeological Resources	Mitigation Measure CULT-4: Archaeological	
Although the potential to encounter archaeological or Native American resources is considered remote, mitigation measures were identified in the Initial Study prepared for the proposed project to reduce impacts to a less than significant level in the unlikely event resources are encountered during project implementation.	Resources Treatment. If archaeological resources are encountered during project implementation, an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards (the "archaeologist") shall be immediately notified and retained by the applicant and approved by the City to oversee and carry out these mitigation measures.	
	The archaeologist shall coordinate with the applicant as to the immediate treatment of the find until a proper site visit and evaluation is made by the archaeologist. The archaeologist shall be allowed to	
	temporarily divert or redirect grading or excavation activities in the vicinity in order to make an evaluation of the find and determine appropriate	
	treatment. Treatment will include the goals of	
	interpretation of historic and archaeological	
	resources. All cultural resources recovered shall be documented on California Department of Parks and	
	Recreation Site Forms to be filed with the CHRIS-	
	about the find to be filed with Project Applicant, the	
	City, and the CHRIS-SCCIC, as required by the	
	shall include documentation and interpretation of	
	resources recovered. Interpretation will include full	
	National and California R Register and CEQA. The	
	report shall also include all specialists' reports as	
	appendices. The Lead Agency shall designate repositories in the event that significant resources are	
	recovered. The archaeologist shall also determine the	

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
	need for archaeological and Native American monitoring for any ground-disturbing activities thereafter.	
	If warranted, the archaeologist will develop a monitoring program in coordination with a Native American representative (if there is potential to encounter prehistoric or Native American resources), the applicant, and the City. The monitoring program will also include a treatment plan for any additional resources encountered and a final report on findings.	
Paleontological Resources Although construction of the project is considered to have low potential to result in significant impacts associated with the permanent loss of, or loss of access to, a paleontological resource, mitigation was identified in the Initial Study prepared for the proposed project to reduce impacts to a less than significant level in the unlikely event that paleontological resources are encountered during project implementation.	Mitigation Measure CULT-5: Paleontological Resources Treatment. A qualified paleontologist shall attend a pre-grade meeting and develop a paleontological monitoring program to cover excavations in the event they occur into the older Quaternary Alluvium. A qualified paleontologist is defined as a paleontologist meeting the criteria established by the Society for Vertebrate Paleontology. If excavation into Quaternary deposits occurs, monitoring shall consist of visually inspecting fresh exposures of rock for larger fossil remains and, where appropriate, collecting wet or dry screened sediment samples of promising horizons for smaller fossil remains. If it is determined that excavation will not encounter Quaternary deposits, no further measures need be taken. The frequency of monitoring inspections shall be based on the rate of excavation and grading activities, the materials being excavated, and if found, the abundance and type of fossils encountered.	
	If a fossil is found, the paleontologist shall be allowed to temporarily divert or redirect grading and excavation activities in the area of the exposed fossil to facilitate evaluation and, if necessary, salvage. At	

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
	the paleontologist's discretion and to reduce any construction delay, the grading and excavation contractor shall assist in removing rock samples for initial processing. Any fossils encountered and recovered shall be prepared to the point of identification and catalogued before they are donated to their final repository. Any fossils collected shall be donated to a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County. Accompanying notes, maps, and photographs shall also be filed at the repository.	
	If fossils are found following completion of the above tasks, the paleontologist shall prepare a report summarizing the results of the monitoring and salvaging efforts, the methodology used in these efforts, as well as a description of the fossils collected and their significance. The report shall be submitted by the applicant to the lead agency, the Natural History Museum of Los Angeles County, and representatives of other appropriate or concerned agencies to signify the satisfactory completion of the project and required mitigation measures.	
D. GREENHOUSE GAS EMISSIONS		
Project Impacts Construction and operation of the proposed project would result in an increase in greenhouse gas (GHG) emissions that exceed SCAQMD's mass emissions thresholds. Even though the proposed new turbine would comply with the state's emission performance standards, and the control room would comply with the City's Green Building Standards, impacts would be significant.	There are no mitigation measures available to reduce turbine GHG emissions beyond what is included in the project design.	Significant and Unavoidable (Project and Cumulative)

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
Cumulative Impacts The proposed project's more efficient use of energy and the replacement of the older 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 electricity system will decline when new gas-fired power plants are added, since this will improve the overall efficiency of the electricity system and serve capacity needs more efficiently than the existing system. The proposed project would be more efficient than continued operation of existing Unit B-3.		
However, conservatively assuming that Unit GT-5 would operate up to its permitted limit of 8,760 hours per year, the proposed project would generate greater GHG emissions than Unit B-3 under existing conditions. Therefore, the project is considered to have a cumulatively considerable contribution to cumulatively significant GHG emissions.		
E. HAZARDS AND HAZARDOUS MATERIALS	NT the set	
Project construction activities would include the limited use of hazardous materials; however, the use and storage of such materials would comply with applicable standards and regulations, and would not pose significant hazards to surrounding land uses, including the nearby school facilities. Impacts resulting from the limited use of hazardous materials would be less than significant.	No mitigation measures are necessary.	Less I nan Significant
Asbestos A site survey for asbestos-containing materials	Mitigation Measure HAZ-1: Prior to the issuance of demolition permits, PWP shall submit to the City of Pasadena Building and Safety Division a	Less Than Significant

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
(ACM) determined that various areas on-site are known to contain ACM. Demolition of buildings containing ACM is therefore considered to be a potentially significant impact.	comprehensive pre-demolition asbestos survey in accordance with SCAQMD Rule 1403. All identified asbestos-containing materials shall be removed and disposed of by a registered Cal-OSHA-certified asbestos abatement contractor prior to any disturbance of the material, and the Applicant shall submit documentary proof of such handling to the City.	
Lead-Based Paint A site survey for lead-based paint (LBP) determined that LBP is present on various interior and exterior surfaces. Therefore, demolition of buildings containing LBP is considered to be a potentially significant impact.	Mitigation Measure HAZ-2: Prior to issuance of demolition permits, PWP shall submit to the City of Pasadena Building and Safety Division a lead-based paint survey for all existing buildings located on the project site. All identified lead-based paint shall be handled and disposed of pursuant to OSHA regulations, and the Applicant shall submit documentary proof of such handling to the City.	Less Than Significant
Contaminated Soils Based on the results of a limited Phase II Environmental Site Assessment (ESA), an area of contaminated soil was identified near the proposed site of new Unit GT-5 that could yield lead concentration levels that could result in a hazard to the public or the environment during soil construction excavation activities. In addition, soils that yielded samples with TRPH concentrations greater than 1,000 mg/kg could result in similar hazardous materials impacts. These are considered potentially significant impacts.	Mitigation Measure HAZ-3: Shallow soil contamination at the proximity of GP32 (total lead concentration of 1,400 ppm at 1.5 feet bgs), as indicated in the Phase II Environmental Site Assessment, shall be excavated and disposed of offsite. The lateral extent of the remedial excavation may extend to GP-31, GP-33, and BH-7. The vertical extent of remedial excavation is anticipated to be less than 5 feet. In addition, if the soil at the vicinity of the above mentioned locations is planned for off-site disposal, then the excavated soil shall be stock piled and a WET test shall be made on stock pile soil samples to determine the soluble lead concentration of the stock piled soil for soil disposal purposes.	Less Than Significant
	of the locations (as identified in the Phase II Environmental Site Assessment) where TRPH concentrations exceed 1,000 ppm is planned for off-	

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
	site disposal then the excavated soil shall be stock piled and analytically tested for TPH and VOCs using EPA Method 8015 M and 8260B or per soil disposal facility requirements.	
	Mitigation Measure HAZ-5 : During project design development and prior to initiation of excavation and grading activities, PWP shall retain a qualified environmental consultant to prepare a soils management plan that shall be submitted to the City of Pasadena Building and Safety Division for review and approval. The soils management plan shall be implemented during excavation and grading activities on the project site to ensure that any contaminated soils are properly disposed of offsite. The plan shall include, but not necessarily be limited to the following:	
	• A qualified environmental consultant shall be present as necessary during excavation or grading activities to monitor compliance with the soils management plan and to actively monitor the soils and excavations for evidence of contamination.	
	• Any soil encountered during excavation or grading activities that appears to have been affected by hydrocarbons or any other contamination shall be evaluated, based upon appropriate laboratory analysis, by a qualified environmental consultant prior to offsite disposal at a licensed facility.	
	• Soils in the southwestern corner of the site near Boring Location GP32 and where TRPH concentrations exceed 1,000 ppm, as identified in the Limited Phase II ESA, shall be segregated and analyzed prior to offsite	

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
	disposal per Mitigation Measure 4.E-1.C and 4.E-1.D, respectively. This may require over- excavation in these area and further analysis of this soil to determine the extent of soil contamination.	
	 All identified contaminated soils shall be properly handled and transported to an appropriately licensed disposal facility. 	
Aqueous Ammonia	No mitigation measures are necessary.	Less Than Significant
Implementation of the proposed project would involve the use of aqueous ammonia, which is currently used on the project site. The project would reduce the amount of aqueous ammonia compared to existing conditions and the project would implement safety controls and procedures during future operation of the site. Therefore, impacts regarding the use of aqueous ammonia would be less than significant.		
Natural Gas	No mitigation measures are necessary.	Less Than Significant
The proposed project would replace the Unit B-3 steam-generating units with Unit GT-5, which would require include a new gas-powered turbine. A new underground natural gas pipeline would be installed to provide natural gas for Unit GT-5. Given that natural gas is currently being utilized safely to operate the four natural gas turbine generators located on-site and safety features would be utilized during future operation, impacts would be less than significant.		
Release Scenarios	No mitigation measures are necessary.	Less Than Significant
The proposed project could result in the accidental release of ammonia or natural gas during operations. The project would implement		

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
numerous safety controls and procedures to be utilized during future operation of the site which would minimize the potential for accidental release and procedures are in place to notify those in proximity to the project site during an accidental release. Therefore, impacts regarding the accidental release of aqueous ammonia or natural gas are concluded to be less than significant.		
Railroad Hazards	No mitigation measures are necessary.	Less Than Significant
The Metro Gold Line Light Rail Railroad right-of- way (ROW) bisects the Power Plant site and is immediately east of the Glenarm Plant. The project and the associated work would be entirely on the Glenarm Plant and no work would be performed within Metro's Gold Line Light Rail Railroad ROW. No new buildings adjacent to the Metro ROW are planned as part of the project. In addition, contractor employee parking and access would not require entering the project area immediately adjacent to the active railroad ROW.		
As construction of the project and its proposed new facilities are not anticipated to occur adjacent to the Metro ROW, it is not expected that the project facilities would be subject to the building requirements of Metro. Nonetheless, PWP would submit plans and drawings to Metro for review.		
Throughout construction activities, Metro staff would be permitted to monitor construction activity to ascertain any impact to the railroad ROW. In addition, PWP would notify Metro of any changes to the construction/building plans that may impact the railroad ROW. Based on the above, impacts on Metro's Gold Line Light Rail Railroad		

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
would be less than significant.		
F. LAND USE AND PLANNING		
The proposed project would be consistent with the existing land uses on the site and generally consistent with the applicable policies and regulations set forth in the City's General Plan, South Fair Oaks Specific Plan, and Zoning Code. However, 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. Moreover, the proposed employee parking lot south of the Glenarm Building would conflict with 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. These are conservatively considered significant land use impacts.	There is no feasible mitigation available.	Significant and Unavoidable
G. NOISE		
Construction Noise	No mitigation measures are necessary.	Less Than Significant
Construction Noise		
Project construction would require the use of mobile heavy equipment for demolition, asbestos abatement, site clearing, grading, excavation, and construction of the power generation unit and auxiliary facilities. On-site construction noise associated with the proposed project would not expose nearby residential uses to noise levels in excess of applicable standards. Therefore, impacts would be less than significant.		

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
Off-Site Construction Activities Haul and delivery trucks associated with project construction are also potential sources of off-site noise. Off-site truck trips associated with construction would not expose nearby residential uses to noise levels in excess of applicable standards. Therefore, impacts would be less than significant.	No mitigation measures are necessary.	Less Than Significant
Ground-Borne Vibration During Construction	No mitigation measures are necessary.	Less Than Significant
The proposed Project would generate ground-borne construction vibration during demolition and grading activities such as large bulldozer operation. Ground-borne vibration associated with construction would not expose nearby residential buildings to vibration levels in excess of applicable standards. Therefore, impacts would be less than significant.		
Operational Noise		
The proposed project would include the installation of the GT-5 combined cycle system which has the potential to impact noise sensitive receptors. The predicted noise levels from either of the two turbine configurations that are being considered as part of GT-5 would be in compliance with the noise ordinance and therefore impacts would be less than significant.	No mitigation measures are necessary.	Less Than Significant
H. WATER SUPPLY		
Construction	No mitigation measures are necessary.	Less Than Significant
Project construction would create a temporary, intermittent demand for water over the approximately two-year construction period, for		

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
such activities as soil watering for site preparation, fugitive dust control, concrete preparation, painting, cleanup, and other short-term activities. Construction-related water usage is not expected to have an adverse impact on available water supplies or the existing water distribution system, and impacts would be less than significant.		
Operation	No mitigation measures are necessary.	Less Than Significant
<u>Water Demand</u>		
Development of the proposed project is estimated to result in an increase in water demand of 54,660,000 gallons per year or 167.8 acre feet per year. This increase would constitute approximately 5.1 percent of the City's total increase in water demand through 2035, or approximately 0.39 percent of the City's projected water demand for 2035. The proposed project would fall within PWP's available and projected water supplies and no withdrawal directly from groundwater wells is proposed as part of the project. Therefore impacts would be less than significant.		
<u>Water Infrastructure</u>	No mitigation measures are necessary.	Less Than Significant
The proposed project would connect to the water mains that currently serve the Glenarm Plant. These mains have adequate capacity to accommodate the project-related increase in water consumption. Implementation of the project's proposed water conservation measures would further reduce demand. Therefore, impacts associated with water infrastructure would be less than significant.		