Initial Study/Mitigation Negative Declaration

El Dorado Irrigation District
El Dorado Hills Wastewater Treatment Plant
Solar Array Expansion Project

Prepared for:

El Dorado Irrigation District

May 2019

Prepared by:

AECOM

Initial Study/Mitigation Negative Declaration

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El Dorado Hills Wastewater Treatment Plant
Solar Array Expansion Project

Prepared for:

El Dorado Irrigation District
2890 Mosquito Road
Placerville, CA 95667

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May 2019

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ACRONYMS AND OTHER ABBREVIATIONS

AB	Assembly Bill
AC	alternating current
AQAP	air quality attainment plans
AQMP	air quality management plans
ARB	California Air Resources Board
BMP	Best Management Practice
B.P.	Before Present
ca.	circa
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
Cortese list	State of California Department of Toxic Substances Control Hazardous Waste and Substance Site list
dB	decibel
dBA	A-weighted decibel
dc	direct current
EDCAPCD	El Dorado County Air Pollution Control District
EDCAQMD	El Dorado County Air Quality Management District
EDH WWTP	El Dorado Hills Wastewater Treatment Plant
EID	El Dorado Irrigation District
EIR	environmental impact report
EPA	United States Environmental Protection Agency
FTA	Federal Transit Administration
General Permit	General Construction Activity Stormwater Permit
GHG	greenhouse gas
GWh	gigawatt hours
GWP	Global warming potential
IS	Initial Study
kV	kilovolt
kW	kilowatt
L_{eq}	hourly average noise level
L_{max}	maximum noise level
LOS	level of service
MCAB	Mountain Counties Air Basin

MND	Mitigated Negative Declaration
MRZ	Mineral Resource Zone
MT	metric tons
MW	megawatt
NAAQS	National Ambient Air Quality Standards
N_2O	nitrous oxide
NO_2	nitrogen dioxide
NOI	Notice of Intent
OES	County Office of Emergency Services
NO_x	oxides of nitrogen
PG&E	Pacific Gas & Electric Company
PM	Particulate matter
$PM_{2.5}$	Particulate matter equal to or less than 2.5 micrometers in diameter
PM_{10}	Particulate matter equal to or less than 10 micrometers in diameter
PPV	peak particle velocity
PRC	Public Resources Code
PV	photovoltaic
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SACOG	Sacramento Area Council of Governments
SCAQMD	South Coast Air Quality Management District
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulfur dioxide
SWPPP	stormwater pollution prevention plan
TAC	toxic air contaminants
VdB	Vibration decibels

El Dorado Irrigation District

NOTICE OF INTENT
TO ADOPT A MITIGATED NEGATIVE DECLARATION
(Pursuant to CEQA Section 21092 and CEQA Guidelines Section 15072)
NOTICE OF PUBLIC HEARING
for the
EI DORADO HILLS WASTEWATER TREATMENT PLANT SOLAR PROJECT

The El Dorado Irrigation District (EID) proposes to adopt a Mitigated Negative Declaration (MND) pursuant to the California Environmental Quality Act (Section 15000 et seq., Title 14, California Code of Regulations) for the El Dorado Hills Waste Water Treatment Plant Solar Project (proposed project).The proposed project involves installation of additional Photovoltaic (PV) solar panels capable of producing electric energy at the existing El Dorado Hills Wastewater Treatment Plant (EDH WWTP).

The proposed solar PV project consists of constructing 1,886-kilowatt (kW) direct current (dc) solar arrays and associated electrical equipment (inverters, transformers, switchgear, system disconnects, and service meters) at the EDH WWTP site. The new solar PV arrays would occupy about 6.5 acres within the boundary of the EDH WWTP site. Construction staging areas for equipment storage, material delivery, and employee vehicles would be contained entirely on the waste water treatment plant site. Project construction is anticipated to take approximately 7 to 9 months. The project site is not identified on the lists specified in Government Code section 65962.5. EID is the lead agency under the California Environmental Quality Act (CEQA) for the Project and has directed the preparation of an Initial Study (IS) on the proposed project in accordance with the requirements of CEQA, the State CEQA Guidelines, and EID's guidelines. The IS describes the proposed project and assesses the proposed project's potentially significant adverse impacts on the physical environment. It concludes that the proposed project's potentially significant or significant adverse effects on the environment could be mitigated to less-than-significant levels; therefore, a proposed Mitigated Negative Declaration (MND) has been prepared.

Agencies and members of the public are invited to comment on the proposed IS/MND. The comment period is from May 13, 2019 to June 11, 2019. The proposed IS/MND can be reviewed at EID's Customer Service Building, 2890 Mosquito Road, Placerville, CA 95667 or on the EID web site at www.eid.org/ceqa. Comments must be received by 5:00 p.m. on June 11, 2019. Comments can be sent to Brian Deason, Environmental Resources Supervisor, El Dorado Irrigation District, at the address above or by email at bdeason@eid.org. EID will hold a public hearing to consider the IS/MND on June 24, 2019 at 9:00 a.m. during a regularly scheduled meeting of the EID Board of Directors. The hearing will be in the EID Customer Service Building Board Room at the above address.

In accordance with the Americans with Disabilities Act (ADA) and California law, it is the policy of the El Dorado Irrigation District to offer its public programs, services and meetings in a manner that is readily accessible to everyone, including individuals with disabilities. If you are a person with a disability and require information or materials in an appropriate alternative format; or if you require any other accommodation for this meeting, please contact the EID ADA coordinator at 530.642.4045 or email at adacoordinator@eid.org at least 72 hours prior to the meeting. Advance notification within this guideline will enable the District to make reasonable accommodations to ensure accessibility.

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1 INTRODUCTION

1.1 BACKGROUND

The El Dorado Irrigation District (EID) is proposing to install additional solar photovoltaic (PV) arrays at its existing El Dorado Hills Wastewater Treatment Plant (EDH WWTP). These arrays would produce electric power to offset the cost of power required to operate the EDH WWTP.

As Lead Agency, in accordance with the California Environmental Quality Act (CEQA), EID has prepared this Initial Study (IS) to support the findings and conclusions of the Mitigated Negative Declaration (MND) prepared for this project.

1.2 PURPOSE OF THE INITIAL STUDY

This document is an IS, prepared in accordance with CEQA (Public Resources Code [PRC], Section 21000 et seq.) and the CEQA Guidelines (Title 14, Section 15000 et seq. of the California Code of Regulations). The purpose of this IS is to (1) determine whether project implementation would result in potentially significant or significant effects on the environment; and (2) incorporate environmental commitments into the project design, and propose feasible mitigation measures, as necessary, to eliminate the project's potentially significant or significant project effects, or reduce them to a less than significant level.

An IS presents environmental analysis and substantial evidence in support of its conclusions regarding the significance of environmental impacts. Substantial evidence may include expert opinion based on facts, technical studies, or reasonable assumptions based on facts. An IS is neither intended nor required to include the level of detail provided in an Environmental Impact Report (EIR).

CEQA requires that State and local government agencies consider the environmental consequences of projects that they propose to carry out or over which they have discretionary authority, before implementing or approving those projects. The public agency that has the principal responsibility for carrying out or approving a project is the lead agency for CEQA compliance (CEQA Guidelines Section 15367). EID has principal responsibility for carrying out the proposed project, and EID is the CEQA lead agency for this IS.

EID has prepared this IS to evaluate the potential environmental effects of the proposed project, and has incorporated mitigation measures to reduce or eliminate potentially significant project-related impacts. Therefore, an MND has been prepared for this project.

1.3 SUMMARY OF FINDINGS

Chapter 3 of this document contains the analysis and discussion of potential environmental impacts of the proposed project. The analysis determined that the proposed project would result in no impacts related to:

- Agriculture and Forestry Resources
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services

- Recreation
- Tribal Cultural Resources

Impacts of the proposed project were determined to be less than significant for the following topics:

- Aesthetics
- Air Quality
- Energy
- Greenhouse Gas Emissions
- Wildfire

The proposed project would result in less than significant impacts *with* mitigation on the following issue areas:

- Biology
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Transportation/Traffic

1.4 DOCUMENT ORGANIZATION

This document is divided into the following sections:

Notice of Intent to Consider Adoption of a Proposed MND and Notice of Public Hearing. The notice of intent to consider adoption of a proposed MND provides notice to responsible and trustee agencies, interested parties, and organizations of the availability of this IS and notice of the public hearing.

Mitigated Negative Declaration. The MND, which precedes the IS analysis, summarizes the environmental conclusions and identifies mitigation measures that would be implemented in conjunction with the proposed project.

Chapter 1, "Introduction." This chapter briefly summarizes the proposed project and describes the purpose of the IS/MND, summarizes findings, and describes the organization of this IS/MND.

Chapter 2, "Project Description." This chapter describes the purpose of and need for the proposed project, general background, and project elements.

Chapter 3, "Environmental Checklist." This chapter presents an analysis of environmental issues identified in the CEQA environmental checklist and determines whether project implementation would result in a beneficial impact, no impact, a less than significant impact, a less than significant impact with mitigation incorporated, a potentially significant impact, or a significant impact on the environment in each issue area. Should any impacts be determined to be potentially significant or significant, an EIR would be required. For this project, however, mitigation measures have been incorporated, as needed, to reduce all potentially significant and significant impacts to a less than significant level.

Chapter 4, "References." This chapter lists the references used in preparation of this IS/MND.

Chapter 5, "Report Preparers." This chapter identifies report preparers.

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2 PROJECT DESCRIPTION

2.1 PROJECT PURPOSE AND OBJECTIVES

EID is proposing to install additional PV solar panels capable of producing electric energy at the existing EDH WWTP. The solar panels would be managed and maintained by a third-party power provider that would provide power to EID at a fixed reduced rate.

The purpose of this project is to increase the renewable energy produced by the solar panels to offset consumed conventional power produced by the regional electric utility Pacific Gas & Electric Company (PG&E), reduce utility billing costs, and provide long-term energy cost savings for operation of EDH WWTP.

2.2 LOCATION

The EDH WWTP is located in an unincorporated area of El Dorado County. The project area is located east of Latrobe Road and the El Dorado Hills Business Park, and south of White Rock Road and Highway 50 (Figure 1). The project area is located in Township 9 north, Range 8 east, Sections 13 and 14 of the United States Geological Survey 7.5-minute Clarksville quadrangle.

2.3 PROPOSED SOLAR PV SYSTEM DESCRIPTION

The proposed solar PV project consists of constructing 1,886-kilowatt (kW) direct current (dc) solar arrays and associated electrical equipment (inverters, transformers, switchgear, system disconnects, and service meters) at the EDH WWTP site. The new solar PV system would be situated east of the EDH WWTP and reservoir, and north and south of the existing 1-megawatt (MW) ground-mount solar PV system that was installed in 2005. A total of 46 solar arrays of various lengths would be installed, supplementing the existing 16 solar PV arrays currently located on the EDH WWTP site.

The new solar PV arrays would occupy about 6.5 acres within the boundary of the EDH WWTP site. When combined with the existing arrays, the total area to be occupied by the solar PV system would equal about 9 acres. Construction staging areas for equipment storage, material delivery, and employee vehicles would be contained entirely on the EDH WWTP site.

Figure 2 depicts the location of the proposed 46 additional solar arrays and adjacent 16 existing arrays on the EDH WWTP site.

The additional solar arrays layout would consist of four separate groups of ground-mounted, fixed-tilt racking systems configured in rows facing southwest at an azimuth of 196 degrees, and installed north and south of the existing solar PV system. The solar panels would be attached to the racking structures with a 25 degree tilt facing southwest. The height of the installed panels would range from 2 feet at the lower edge of the titled rows to about 7 feet at the higher-rear edge of the array. The solar panels would consist of 370-watt high-efficiency modules with integrated anti-reflective coating. Figure 3 shows a typical solar module consisting of an angled solar panel mounted on legs that elevate it above the ground surface. Crushed gravel would be placed around each array to control weed growth, reduce fire hazards, and provide ease of access to the modules by maintenance crews and vehicles.

The new solar PV system would have a 1.88-MW-rated capacity capable of generating about 5.4 gigawatt hours (GWh) annually. When combined with the existing solar PV array, the total system generation would be about 8.4 GWh annually. This energy production estimate assumes an average 8 hours of energy generation over 365 days per year.

The wired connection between the solar arrays and the designated point of interconnection (located west of the EDH WWTP reservoir at the Headworks Electrical Room) would consist of 12-kilovolt (kV) alternating current (AC) electrical lines mounted on existing poles supporting the electrical lines used to connect the existing 1.0-MW solar array. PG&E would be performing minor upgrades to their existing 21-kV distribution system to facilitate the interconnection.

2.4 CONSTRUCTION METHODS

Site preparations would consist of minor grubbing and grading in the areas where the arrays are to be installed, with no change in slope; all existing drainages would be maintained. The solar array racking systems would be secured with in-ground steel posts that would be either driven into the ground (if soils conditions permit) or cast in place using concrete foundations.

During grading and soil disturbance (trenching) activities, there would be one grader, one loader, one backhoe, and one 10-yard dump truck to achieve the desired grade of the project site and locally transport soils. During the concrete pouring, approximately four concrete trucks would transport the concrete to the project site.

During equipment installation, one to two flatbed semi-trucks would transport the solar panel modules to the project site requiring approximately 100 trips. A water truck would also be used during construction to cut dust emissions. An estimated 500 trips would be necessary to use about 5,000 cubic yards of crushed gravel that will be spread around the arrays, and 25 truck trips would be necessary for additional construction materials. During the remainder of the project, a limited number of light-duty trucks would be used by construction personnel. An estimated 12 workers would be onsite during the duration of construction.

Solar PV array construction personnel and equipment would access the EDH WWTP from U.S. Highway 50 at El Dorado Hills via Latrobe Road. Figure 2.1-1 shows the proposed access route in relation to local features.

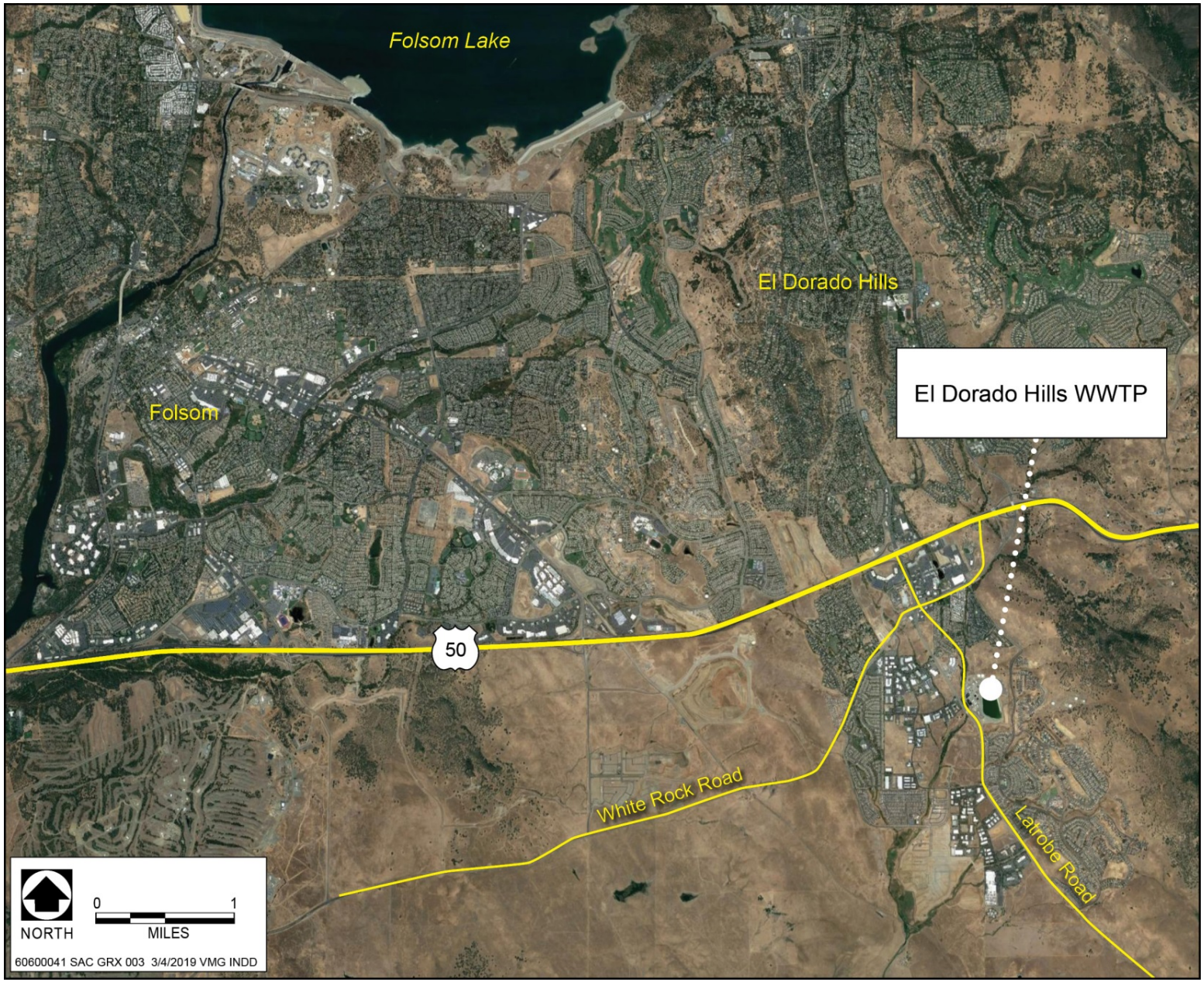
2.5 CONSTRUCTION SCHEDULE

The project construction phase is expected to begin in July 2019 and last approximately 7 to 9 months, with completion and operations start-up planned to occur in early 2020.

2.6 PRIOR CEQA ANALYSES

EID has conducted prior environmental impact analyses on the EDH WWTP and the existing solar PV array system. The most recent upgrade to the EDH WWTP was addressed in an MND prepared by EID in 2007 (EID 2007). The existing solar PV array was addressed in an IS/MND prepared by EID (2005a) and an Addendum to the IS/MND in 2005(EID 2005b).

The 2005 IS/MND and Addendum concluded that the installation and operation of the existing solar PV array would be implemented with no significant environmental impact, provided mitigation was implemented to minimize, reduce, or avoid impacts found to be potentially significant.

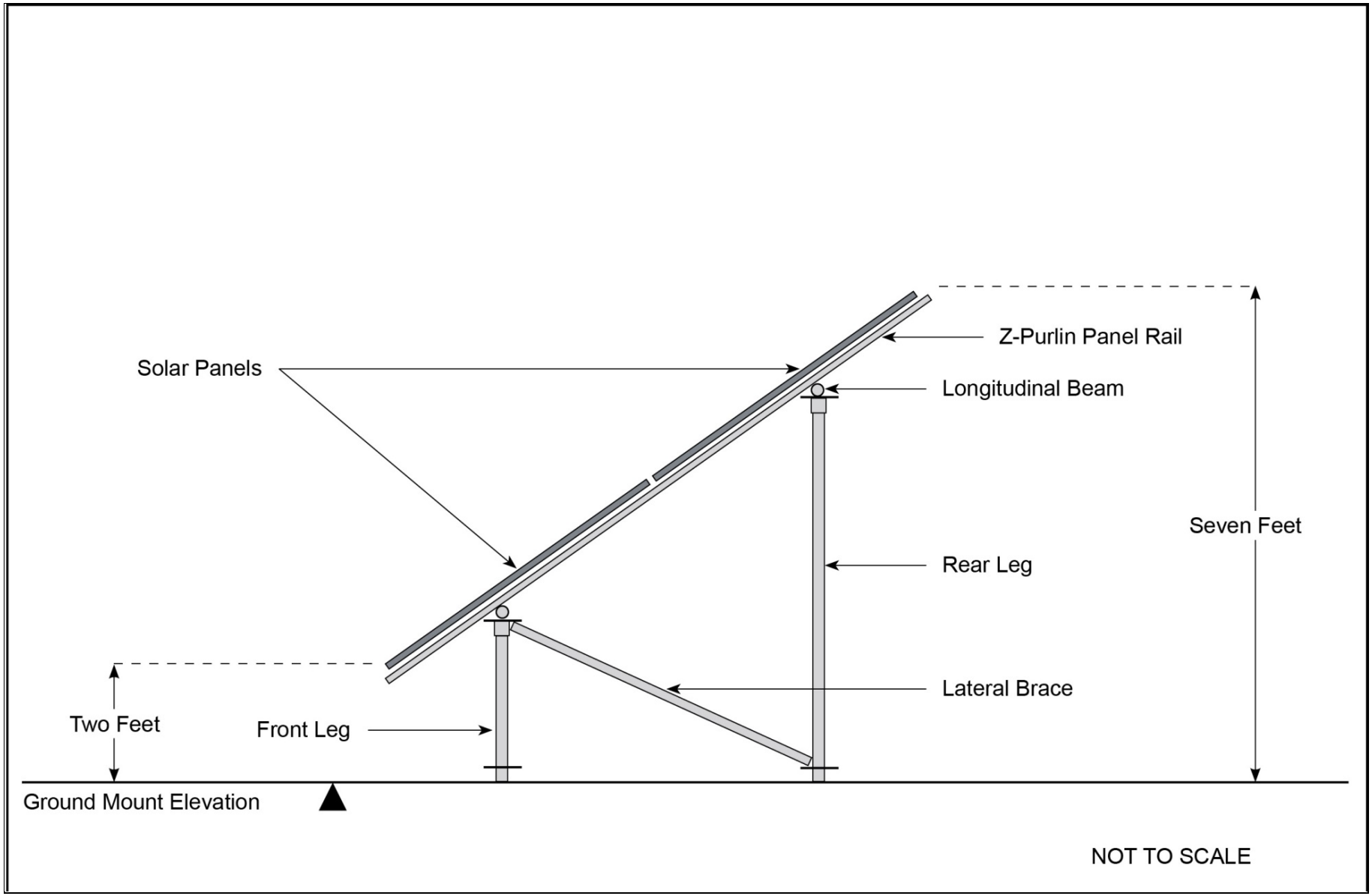


Source: Google Earth Aerial Background Map; AECOM March 2019

Figure 1. Regional Location

Source: Borrego Solar, December 2018, adapted by AECOM March 2019

Figure 2. Proposed Project



Source: Borreo Solar, December 2018; adapted by AECOM, March 2019.

Figure 3 Typical Solar Module

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3 INITIAL STUDY CHECKLIST

PROJECT INFORMATION

1. Project Title: El Dorado Hills Wastewater Treatment Plant Solar Project

2. Lead Agency Name and Address: El Dorado Irrigation District
   2890 Mosquito Road
   Placerville, CA 95667

3. Contact Person and Phone Number: Brian Deason (530) 642-4064

4. Project Location: Township 9 north, Range 8 east, Sections 13 and 14 of the United States Geological Survey 7.5-minute Clarksville quadrangle.

5. Project Sponsor's Name and Address: El Dorado Irrigation District
   2890 Mosquito Road
   Placerville, CA 95667

6. General Plan Designation: Public Facilities

7. Zoning: Open Space

8. Description of Project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)
   EID is proposing to install additional solar (PV) arrays, capable of producing electric energy at the existing EDH WWTP. The solar PV arrays would be managed and maintained by a third-party power provider that would provide power to EID at a fixed, reduced rate.

9. Surrounding Land Uses and Setting: (Briefly describe the project's surroundings)
   The site is bounded on the north, east, and south by land designated Open Space or Multi-use Open Space. There are residential neighborhoods in the area to the east and south of the project site. To the west of the project site is Latrobe Road, beyond which are office buildings.

10. Other public agencies whose approval is required: (e.g., permits, financing approval, or participation agreement)
    None.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

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

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

DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

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

☒ I find that although the proposed project COULD have a significant effect on the environment, there WILL NOT be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.

☐ I find that the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.

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

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier **EIR** or **NEGATIVE DECLARATION** pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier **EIR** or **NEGATIVE DECLARATION**, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

May 10, 2019

Signature — Date

Brian Deason — Environmental Resources Supervisor

Printed Name — Title

El Dorado Irrigation District

Agency

EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
   a) Earlier Analysis Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9. The explanation of each issue should identify:
   a) the significance criteria or threshold, if any, used to evaluate each question; and
   b) the mitigation measure identified, if any, to reduce the impact to less than significance.

3.1 AESTHETICS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. Aesthetics. Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

3.1.1 ENVIRONMENTAL SETTING

The EDH WWTP site is located immediately east of Latrobe Road and 0.65 mile southeast of White Rock Road. The general viewshed looking east from Latrobe Road includes the EDH WWTP, rolling hills, oak trees, ridgelines, and the Valley View Specific Plan neighborhood. The EDH WWTP is screened by vegetation along the Carson Creek channel on the north, but the existing treatment facilities at the EDH WWTP site are evident from Latrobe Road. However, the view of the existing solar PV system from Latrobe Road is partially, if not totally, obscured by the existing reservoir berm. An existing potable water storage tank and recycled water tank are located approximately 0.5 mile east of the EDH WWTP.

Views of the proposed solar PV arrays are mostly obscured from Blackstone Parkway, located east of the EDH WWTP. There are about 20 homes within the Valley View neighborhood, located east of Blackstone Parkway, that have a direct view of the EDH WWTP and the existing and proposed solar PV array locations.

3.1.2 DISCUSSION

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

No scenic vistas are present on the project site. No impact would occur.

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

No scenic resources are present on the project site. The nearest designated scenic highway is State Route 50, stretching from Placerville to Echo Summit. No impact would occur to the visual resources of this highway.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

The existing EDH WWTP is an industrial-type facility consisting of wastewater treatment, storage, and disposal structures and equipment. In addition to two aeration ponds and clarifiers, the EDH WWTP site is dominated by the existing reservoir, which occupies about 20 acres. The undeveloped land surrounding the project site consists of annual grassland. Other developed lands in the project vicinity consist of suburban residential and commercial business properties that have been constructed in the past decade.

The EDH WWTP is located in a non-urbanized area. Views from the Creekside Greens development north of the project site are almost completely blocked by local topography. Only the upper level of the three-level apartment complexes in this development could have a partial view of the project site. Views from the El Dorado Hills Business Park to the west of the project are partially blocked by the riparian vegetation of Carson Creek and local topography. Only the multi-story buildings could have an unobscured view of the project site. From the Valley View Specific Plan neighborhood to the east of the EDH WWTP, ground-level views of the project site would be partially or totally obstructed because of topography. Unobstructed views of the project site would primarily occur from the second floor of these residences. Potential impacts associated from light or glare to these residences is discussed in Item d), and Appendix A to this document.

The existing visual character of the oak woodland and rolling foothill surrounding of the project site to the east would not be affected. The portion of annual grassland to be removed by the project is considered to be a less than significant impact. No mitigation is required.

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

The County General Plan has a policy directed to reduce high-intensity nighttime lighting and glare (Policy 2.8.1.1). The policy states that development shall limit excess nighttime light and glare, using design features such as directional shielding or automatic shutoffs and motions sensors. The proposed project would not add any source of nighttime lighting.

ForgeSolar, a proven solar glare hazard analysis software, was used to model the potential for the proposed solar array to cause glare to approaching motorists and people at nearby dwellings. The ForgeSolar model used to analyze the proposed project employed default model variable values that consider site-specific conditions. The modeling analyzed the project from a worst case scenario without giving consideration to natural or man-made barriers, or potential cloud cover that would otherwise reduce glare. For example, the modeling assumes 365 sunny days each year. Whereas, during the month of October, 30 percent of the time cloud cover limits sun exposure (Weather Spark 2019). To match the equipment specifications for the proposed project, the modeling assumptions considered the type of panel and the use of anti-reflective coating.

The software analysis found glare of various intensity at specific times during the year at the analyzed locations. Most of the glare is caused by 1) the existing EDH WWTP reservoir; and 2) the existing solar PV arrays that generate 2,234 minutes and 308 minutes per year, respectively. The glare analysis is presented in Appendix A of this document.

The proposed project would create 14 minutes-of-glare per year from the new solar panels shown as New North 1 and 485 minutes per year from the new solar panels shown as New South 1, as shown in Appendix A. This would result in about 30 minutes-of-glare per day between March and October, at the residences located east of the EDH WWTP, labeled as observation point (OP) 2. The glare emanating from the proposed solar PV arrays would contribute additional 15 minutes of glare to residences labeled as OP 1 and OP 2 beyond those now emanating from either the EDH WWTP reservoir and existing solar PV arrays. Because residences labeled as OP 1 and OP 2 are subjected to glare during the period of late-afternoon to dusk, the glare from the proposed EDH WWTP solar PV arrays would not increase the number of days of glare or new glare locations. The new South Array 1 would increase additional glare duration (minutes-of-glare per day) at OP 1 by 15 minutes in the month of October, extending the OP 1 glare exposure to 5:45 PM. Therefore, the proposed project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area or create a new nuisance to local residents located at OP 1 and 2. This impact is considered less than significant. No mitigation is required.

3.2 AGRICULTURE & FORESTRY RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
II. Agriculture and Forestry Resources. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997, as updated) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

3.2.1 ENVIRONMENTAL SETTING

According to the California Department of Conservation's Farmland Mapping and Monitoring Program map for El Dorado County, the project site is not designated prime farmland, farmland of statewide importance, unique farmland, or farmland of local importance (Department of Conservation 2019). No properties used for agricultural

purposes are in or adjacent to the proposed project, and the project site is neither on nor adjacent to any land designated as a Williamson Act parcel.

3.2.2 DISCUSSION

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

The project area is not on any Prime Farmland, Unique Farmland, or Farmland of Statewide importance, as shown on the maps prepared pursuant to the Farmland Mapping Monitoring Program of the California Resources Agency. No impact would occur.

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

The project area is not on lands zoned for agricultural use or under a Williamson Act contract. No impact would occur.

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

The project area is not on lands zoned for forest land or timberland. No impact would occur.

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

The project area is not on lands zoned for forest land. No impact would occur.

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

The proposed project is not on or adjacent to lands designated as Farmland or forest land. The proposed project would not result in the conversion of Farmland or forest land. No impact would occur.

3.3 AIR QUALITY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. Air Quality.				
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied on to make the following determinations.				
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

3.3.1 ENVIRONMENTAL SETTING

The project site is in the Mountain Counties Air Basin (MCAB). The MCAB lies along the northern Sierra Nevada, close to or contiguous with the Nevada border, and covers an area of roughly 11,000 square miles. El Dorado County consists of hilly and mountainous terrain that affects airflow patterns throughout the county. These mountain and hill formations direct surface air flows, cause shallow vertical mixing, and create areas of high pollutant concentrations by hindering dispersion. Because of their proximity to the Sacramento Valley, the MCAB and El Dorado County are prone to receiving pollutant transport from the more populated and traffic-heavy areas.

Various air pollutants may adversely affect human or animal health, reduce visibility, damage property, and reduce the productivity or vigor of crops and natural vegetation. Criteria air pollutants have been identified by the United States Environmental Protection Agency (EPA) and the California Air Resources Board (ARB) as being of concern both on a nationwide and statewide level: ozone; carbon monoxide (CO); nitrogen dioxide (NO_2); sulfur dioxide (SO_2); lead; and particulate matter (PM), which is subdivided into two classes based on particle size: PM equal to or less than 10 micrometers in diameter (PM_{10}) and PM equal to or less than 2.5 micrometers in diameter ($PM_{2.5}$).

In addition to criteria air pollutants, EPA and ARB regulate toxic air contaminants (TACs), also known as hazardous air pollutants. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health.

Serpentine is a mineral commonly found in seismically active regions of California, usually in association with ultramafic rocks and along associated faults. Certain types of serpentine occur naturally in a fibrous form known generically as asbestos. According to the Asbestos Review Area map for El Dorado County, naturally occurring asbestos-bearing serpentine is not typically found in the geological formations present in the project area (EDCAQMD 2018).

Federal, state, and local plans, policies, laws, and regulations provide a framework for addressing aspects of air quality that would be affected by the proposed project. The regulatory setting for air quality is discussed in detail in Appendix A. A summary of that information as it relates to the impact analysis is provided below.

Health-based air quality standards have been established for the criteria air pollutants by EPA at the national level, and by ARB at the state level; these are referred to as the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS), respectively.

The MCAB is designated as a nonattainment area for ozone, and as an attainment or unclassified area for all other pollutants. With respect to the CAAQS, the MCAB is currently designated as a nonattainment area for ozone and PM_{10}, and as an attainment or unclassified area for all other pollutants.

EPA requires each state with regions that have not attained the NAAQS to prepare a state implementation plan (SIP) detailing how each local area will meet these standards. ARB is the lead agency for developing California's SIP, and oversees the activities of local air quality management agencies. Emission reduction programs and measures are described in air quality attainment plans (AQAPs) or air quality management plans (AQMPs) that the air districts submit to ARB for review and approval. ARB incorporates the AQAPs and AQMPs from local air districts into the SIP for EPA approval.

The El Dorado County Air Quality Management District (EDCAQMD) attains and maintains air quality conditions in El Dorado County. EDCAQMD was formerly known as the El Dorado County Air Pollution Control District (EDCAPCD). After the El Dorado County Air Pollution Control District Guide to Air Quality Assessment (Guide) was published, the name of the air district was changed to EDCAQMD. Therefore, all references to the air district in this analysis, with the exception of the Guide, are EDCAQMD.

EDCAQMD requires all projects to implement Rule 202 (Visible Emissions), Rule 205 (Nuisance), Rule 223 (Fugitive Dust—General Requirements), Rule 223-1 (Fugitive Dust—Construction, Bulk Material Handling, Blasting, Other Earthmoving Activities and Carryout and Trackout Prevention), Rule 223-2 (Fugitive Dust—Asbestos Hazard Mitigation), and Rule 300 (Open Burning).

3.3.2 DISCUSSION

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

Construction-Related Impact

Project consistency is based on whether the project would conflict with or obstruct implementation of the air quality plan and/or applicable portions of the SIP, which would lead to increases in the frequency or severity of existing air quality violations. The region's AQAP was developed pursuant to California Clean Air Act requirements, and identifies feasible emissions control measures to provide expeditious progress in attaining the

ozone standard. Assumptions about land use development used in the AQAP are taken from local and regional planning documents, including general plan land use designations and zoning.

Consistency with the AQAP is determined by analyzing a project with the assumptions in the AQAP. The project would involve the use of off-road equipment, haul trucks, and worker commute trips. The project would not substantially increase mobile-source emissions that were previously included in the AQAP. Therefore, the emissions associated with implementation of the project have been accounted for in the emissions modeling for the current AQAP, and will be accounted for in future AQAPs. Accordingly, implementation of the project would not exceed the assumptions used to develop the current plan, and would not obstruct or conflict with the AQAP.

As discussed in question c below and shown in Table 3.3-1, the project would also not exceed the recommended thresholds of significance for emissions of ozone precursors (reactive organic gases [ROG] and oxides of nitrogen [NO_X]). EID contract specifications include requirements that contractors maintain construction equipment in good operating condition to minimize air pollution. Because the project would not result in a significant increase in ROG and NO_X emissions, the project would not conflict with or obstruct implementation of the AQAP and SIP. This construction-related impact would be less than significant.

Operation-Related Impact

Implementation of the project would not require or result in additional activities for operations and maintenance beyond existing conditions. Therefore, no impact would occur as a result of project operations.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

The cumulative analysis focuses on whether a specific project would result in cumulatively considerable increase in emissions. By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development in the MCAB, and this regional impact is cumulative rather than being attributable to any one source. A project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development projects.

The EDCAQMD approach for determining whether a proposed project has a significant cumulative impact is by determining whether the project is consistent with an approved plan or mitigation program of regional application in place for the pollutants emitted by the proposed project. This applies to both the construction and operation phases of a project. With regard to ROG and NO_x emissions, the project would be considered consistent with the AQAP and not have a significant cumulative impact if the project:

- Does not require a change in the existing land use designation (e.g., a general plan amendment or rezone), and projected emissions of ROG and NO_x from the project are equal to or less than the emissions anticipated for the site if developed under the existing land use designation.
- Does not exceed the "project alone" significance criteria.
- Includes any applicable emission reduction measures contained in and/or derived from the AQAP.
- Complies with all applicable air district rules and regulations.

With regard to PM_{10} emissions, the project would not be considered significant for cumulative impacts of PM_{10} if the project:

- Is not significant for "project alone" emissions of these pollutants (i.e., does not exceed CAAQS or NAAQS).
- Complies with all applicable rules and regulations of the EDCAQMD.
- Is not cumulatively significant for ROG, NO_x, and CO based on the criteria set forth above.

Construction-Related Impact

As discussed previously, the project would generate construction-related emissions of criteria air pollutants, but at levels that would not exceed EDCAQMD thresholds. EDCAQMD's thresholds of significance are relevant to whether a project's individual emissions would result in a cumulatively considerable incremental contribution to the existing air quality conditions. These thresholds are designed to identify projects that would result in significant levels of air pollution on a project level that would impede and obstruct the region in attaining and maintaining the applicable CAAQS and NAAQS. Because the emission estimates presented in Table 3.3-1 would not exceed any EDCAQMD project-level significance thresholds for air quality, the project would not impede or obstruct attainment and maintenance of the ambient air quality standards.

The project would not exceed the EDCAQMD significance criteria, would comply with the existing AQAP, would include applicable emission reduction measures, and would comply with all applicable air district rules and regulations. The District contractor plans and specifications require compliance with the EDCAQMD Rules. Therefore, the project's construction emissions would not be considered a cumulatively considerable contribution to regional air quality. Therefore, the construction-related impact would be less than significant.

Operation-Related Impact

The project would not require a change to the existing land use designation. Implementation of the project would not require or result in additional activities for operations and maintenance beyond existing conditions. Therefore, no impact would occur as a result of project operations.

c) Expose sensitive receptors to substantial pollutant concentrations?

Some members of the population—children, older adults, and persons with pre-existing respiratory or cardiovascular illness—are especially sensitive to air pollutant emissions. Such people are given additional consideration when the impacts of projects on air quality are evaluated. Therefore, at-risk land uses sensitive to poor air quality would include residences, schools, daycare centers, playgrounds, medical facilities, and nursing homes. Recreational land uses, such as parks, are also considered moderately sensitive to air pollution. The land uses surrounding the project area include residential uses. Single-family residences are located adjacent to and at varying distances from the project area. These are considered the closest sensitive receptors that would be affected by the project.

Construction-Related Impact

Construction emissions are described as "short term" or temporary; however, they have the potential to represent a significant impact with respect to air quality. Construction of the project would temporarily generate ROG, CO, NO_X, PM_{10}, and $PM_{2.5}$ emissions. During construction, criteria air pollutants and precursors would be temporarily

and intermittently emitted by a variety of sources: off-road equipment, on-road haul trucks and worker vehicles, and soil disturbance.

As shown in Table 3.3-1, average daily construction emissions for the project are estimated to be less than 1 pound of ROG, approximately 6 pounds of NO_X, 4 pounds of CO, 1 pound of PM_{10}, and 1 pound of $PM_{2.5}$. Additional emission modeling assumptions and details are provided in Appendix B.

Table 3.3-1
Average Daily Construction Emissions

	Average Daily Emissions (pound(s) per day)				
Construction Phase	**ROG**	**NO_X**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Average daily emissions	0.8	7.1	6.2	0.9	0.6
Threshold of significance	82	82	AAQS	AAQS	NA
Significant Impact?	No	No	No	No	No

Notes: AAQS = ambient air quality standards; CO = carbon monoxide; NA = not applicable; NO_X = oxides of nitrogen; PM_{10} = particulate matter equal to or less than 10 micrometers in diameter; $PM_{2.5}$ = particulate matter equal to or less than 2.5 micrometers in diameter; ROG = reactive organic gases.

Source: Modeled by AECOM in 2019

As shown in Table 3.3-1, construction-related emissions would not exceed the thresholds of significance; and would not violate any air quality standard; and would not contribute substantially to an existing or projected air quality violation. Furthermore, according to the EDCAQMD *Guide to Air Quality Assessment*, construction-related fugitive dust emissions are not considered to be significant if mitigation is part of the project, or a mandatory condition of the project. To make this finding, the project must commit to implementing fugitive dust control measures sufficient to prevent visible dust beyond the project property lines. According to the EDCAQMD *Guide*, this commitment can be satisfied if the project complies with the requirements of the South Coast Air Quality Management District's (SCAQMD) Rule 403. Therefore, the generation of construction-related emissions and fugitive dust would result in an impact that would be less than significant.

Diesel Particulate Matter

The greatest potential for TAC emissions would be related to emissions of diesel particulate matter (diesel PM) during operation of heavy-duty construction equipment. Health effects from carcinogenic TACs are usually described in terms of individual cancer risk, which is based on a 70-year lifetime exposure to TACs.

Construction of the project would last up to 9 months. Heavy-duty construction equipment would operate at different locations in the 6.5-acre project area, and at varying distances from different sensitive receptors surrounding the project area. Therefore, it is not anticipated that individual receptors would be exposed to TAC emissions for the entire construction period. Construction emissions would occur intermittently throughout the day, as construction equipment is required, rather than as a constant plume of emissions from the site.

Because heavy-duty construction equipment would operate only intermittently during that time frame, the project would not result in long-term (i.e., 70-year lifetime exposure period) emissions of TACs in the immediate vicinity of sensitive receptors. All construction emissions would cease after completion of the project. Therefore, because the duration of potentially harmful construction activities near a sensitive receptor would be about 1 year, the

exposure would be approximately 2 percent of the total exposure period required for typical health risk calculations (i.e., 70 years). Therefore, the project would not expose sensitive receptors to substantial concentrations of diesel PM.

Naturally Occurring Asbestos

During construction of the project, site preparation, grading, and excavation activities would disturb soil and generate dust. As discussed previously, the project is not located in areas designated as "likely to contain asbestos." Because the project is not located in an area "likely to contain asbestos," the project would not expose nearby receptors to substantial asbestos concentrations.

Given the location of the project, the distance of the project area to sensitive receptors, and the project's compliance with applicable EDCAQMD requirements, the project would not expose nearby receptors to substantial pollutant concentrations. This construction-related impact would be less than significant.

Operation-Related Impact

Post-project operations and maintenance would not require new or result in additional activities beyond existing conditions. Therefore, no impact would occur as a result of post-project operations.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Construction-Related Impact

The occurrence and severity of odor impacts depend on numerous factors: the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. Although offensive odors rarely cause physical harm, they still can be very unpleasant, and can generate citizen complaints to local governments and regulatory agencies.

Exhaust from diesel construction equipment may emit odors during project construction. However, because of the temporary nature of these emissions and the highly diffusive properties of diesel exhaust, nearby receptors would not likely be adversely affected by project-related diesel exhaust odors. Odors from these sources would be localized, and generally confined to the immediate area surrounding the project site; and the odors would be typical of most construction sites, and temporary in nature. The District includes requirements in the contractor plans and specifications requiring compliance with the EDCAQMD Rule 205 for reducing potential for nuisance resulting from objectionable odors. As a result, the project would not create objectionable odors affecting a substantial number of people. This construction-related impact would be less than significant.

Operation-Related Impact

Post-project operations and maintenance would not require new or result in additional activities beyond existing conditions. Therefore, no impact would occur as a result of post-project operations.

3.4 BIOLOGICAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. Biological Resources. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

3.4.1 ENVIRONMENTAL SETTING

Biological resources in the project area were characterized based on information contained within the IS/MND for the 2005 EDH WWTP Solar Photovoltaic System Project (EID 2005) and the EDH WWTP Solar Photovoltaic Expansion Project Environmental Constraints Memorandum (EID 2013).

Land in the project area is primarily developed, with an ephemeral drainage and natural biological communities including annual grassland/oak woodland and riparian woodland also present. Annual grassland/oak woodland in the project area occurs north, east and south of the storage reservoir. West of the storage reservoir are the EDH WWTP facilities and Carson Creek. An ephemeral drainage occurs east of the existing storage reservoir in the property boundaries of the EDH WWTP. Carson Creek supports typical riparian woodland species. Development in the project area consists of the EDH WWTP and its associated facilities, Latrobe Road, and Suncast Lane. Because of the frequency and level of disturbance associated with the developed area, none to sparse vegetation

occurs in these areas. When present, vegetation is primarily ruderal (weedy), similar to that occurring within the annual grassland community in the project area.

Based on review of the California Natural Diversity Database, the U.S. Fish and Wildlife Service Information for Planning and Conservation project planning tool, and the California Native Plant Society database for the Clarksville and Folsom SE 7.5 minute USGS quadrangles, 32 special-status species have been previously documented in the region: 10 plant species and 22 wildlife species. Of the 10 plant species none have been detected in prior surveys and none are expected to occur within the project area. Of the 22 wildlife species, none were identified in past surveys conducted in 2003 in support of the original solar project. However, there are 8 special-status wildlife species that have the potential to exist in the project area. The status and habitat characteristics of each species are listed in Table 3.4-1. The remaining 14 wildlife species have been excluded based on a lack of suitable habitat or the site is located outside of the species' geographical or elevational range.

Table 3.4-1.
Special-Status Wildlife Species with Potential to Occur in the Project Area

Special-Status Species	Regulatory Status	Habitat Requirements	Potential for Occurrence on Project Site
Amphibians/Reptiles			
California red-legged frog *Rana draytonii*	**FT; CSC**	Typically requires a permanent water source and is typically found along quiet, slow-moving streams, ponds, or marsh communities with emergent vegetation.	**Could occur.** Potential habitat is present in Carson Creek.
Western pond turtle *Emys marmorata*	CSC	Still or slow-moving water with basking sites and suitable upland habitat for nesting.	**Could occur.** Potential habitat is present in Carson Creek.
Birds			
Lawrence's goldfinch *Spinus lawrencei*	FSC	Nests in open oak or other arid woodland and chaparral, near water. Nearby herbaceous habitats used for feeding. Closely associated with oaks.	**Could occur.** Potential nesting habitat adjacent to site and could use site for foraging.
Loggerhead shrike *Lanius ludovicianus*	FSC, CSC	Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub & washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	**Could occur.** Potential nesting habitat along Carson Creek and foraging habitat present on site.
Swainson's hawk	CT	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, & agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	**Could occur.** Potential nesting habitat in adjacent oak trees and site provides marginally suitable foraging habitat.
Tricolored blackbird	SC	Highly colonial species, most numerous in Central Valley & vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	**Could occur.** Potential nesting habitat along Carson Creek and foraging habitat present on site.
Western burrowing owl	CSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**Could occur.** Potential nesting and foraging habitat on site.
White-tailed kite	CFP	Rolling foothills and valley margins with scattered oaks & river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	**Could occur.** Potential nesting habitat in adjacent oak trees and site provides marginally suitable foraging habitat.

DPS = Distinct Population Segment

Federal Status Categories:
FC = candidate
FD = delisted
FE = federal endangered
FT = federal threatened
FSC = federal species of concern

California Status Categories:
CD = delisted
CE = California state endangered
CFP = California fully protected
CSC = California Species of Special Concern
CT = California state threatened
SC = State candidate for listing

3.4.2 DISCUSSION

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

California Red-legged Frog/Northwestern Pond Turtle

Construction activities would be limited the project site, which is located adjacent to an ephemeral drainage tributary south of Carson Creek. No construction activities would occur on Carson Creek or the drainage. However, aquatic life in the creek or drainage could be affected if water quality of the creek was impacted by construction activities. This could be a potentially significant impact.

Mitigation Measure BIO-1: Implement Mitigation Measure GEO-1.

Implementation of Mitigation Measure BIO-1 would control and minimize erosion associated with grading and excavation at the project site, thereby eliminating impacts to water quality and reducing potential impacts to California red-legged frog and western pond turtle to less than significant.

Swainson's hawk

Although there are no records of Swainson's hawk nesting in El Dorado County, nesting has occurred within 8 miles east in Sacramento County. Nesting usually occurs in riparian woodland with adjacent agricultural and/or grassland for foraging. Therefore, Carson Creek and the adjacent grasslands south of the creek could provide potential habitat for Swainson's hawk. Construction would involve soil disturbance and grading of annual grassland north and south of the existing solar arrays and reservoir and south of Carson Creek within the EDH WWTP property. Depending on the scheduling for construction, there could be a potentially significant impact to Swainson's hawk nesting if a nest was found within ¼ mile of the project site.

Western burrowing owl

Although there are no records of western burrowing owl nesting within 5 miles of the nesting site and no evidence of owl presence was found during previous field surveys, there is potential for burrowing owl to nest on the grasslands present in and around the project site. The presence of burrowing owls could result in a potentially significant impact.

Migratory birds

Special-status migratory birds forage and nest in various artificial and natural biological communities including annual grassland habitat. Potential foraging and nesting habitat for migratory birds such as Lawrence's goldfinch and Loggerhead shrike occurs within the communities in and adjacent to the project site. The presence of special-status migratory bird nests could result in a potentially significant impact.

Raptors

There are several raptors species that either were identified during previous field surveys or forage and nest within various communities within the project area. Potential nesting trees for raptors occur within the riparian woodland and annual grassland communities adjacent to the project site. The disruption or destruction of active raptor nests

is a violation of Section 3503.5 of the California Fish and Game Code and would be considered a potentially significant impact.

Mitigation Measure BIO-2: Preconstruction Surveys for Special-Status Species.

EID shall implement the following mitigation measures for special-status species:

Swainson's Hawk: Preconstruction surveys for Swainson's hawk nests shall be conducted within a minimum of ¼ mile of the project site to verify the absence of this species. In the unforeseen event that the species is present and was not located during previous surveys, appropriate seasonal avoidance measures shall be implemented to avoid construction within ¼ mile of an active nest during the nesting period.

Western Burrowing Owl: Preconstruction surveys for burrowing owls shall be conducted within 250 feet of the project site to verify the absence of this species. In the unforeseen event that the species is present and was not located during previous surveys, appropriate seasonal avoidance and habitat protection measures shall be implemented in agreement with California Department of Fish and Game.

Migratory Birds: Preconstruction surveys for migratory bird nesting would be conducted to identify active nests in the project area. In the unforeseen event that active nest(s) area identified within or near the project site, no construction activities shall be allowed to occur within 100 feet of the nest(s) until the young have fledged.

Raptors: Preconstruction raptor surveys shall be conducted to determine if active nests are present in the project area. If active nests are identified, then no construction activities shall be allowed to occur within 250 to 500 feet of the nests until the young have fledged.

Implementation of Mitigation Measure BIO-2 would minimize disturbance or disruption of any active nesting sites of Swainson's hawk, western burrowing owl, migratory birds and/or raptors and reduce the potentially significant impact to less than significant.

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

The Carson Creek riparian woodland community is recognized as a significant resource in the El Dorado County General Plan. There is a potential for impacts to this resource through stormwater runoff from the ephemeral drainage tributary which enters Carson Creek.

Implementation of Mitigation Measure BIO-1 would control and minimize erosion associated with grading and excavation at the project site, thereby eliminating impacts to water quality and reducing potential impacts to the Carson Creek riparian woodland to less than significant.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Potentially federally jurisdictional wetlands occur within the Carson Creek riparian corridor and the tributary drainage. Erosion and/or sedimentation of these areas resulting from runoff of the project site would be considered a potentially significant impact by filling or interrupting the hydrology of this resource.

Implementation of Mitigation Measure BIO-1 would control and minimize erosion associated with grading and excavation at the project site, thereby eliminating impacts to water quality and reducing potential impacts to Carson Creek and the tributary drainage to less than significant.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

The project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors because no construction would occur within the Carson Creek riparian woodland community or tributary drainage. There is potential for the project to impede the use of native wildlife nursery sites by affecting the nesting of various listed bird species, which would result in a potentially significant impact. Implementation of Mitigation Measure BIO-2 would reduce impacts to nesting bird nursery sites to less than significant.

Implementation of Mitigation Measure BIO-2 would minimize disturbance or disruption of any active nesting sites of Swainson's hawk, western burrowing owl, migratory birds and/or raptors and reduce the potentially significant impact to less than significant.

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

Section 7.4.5 of the El Dorado County General Plan addresses the protection of oak woodland resources. There are species of oak (*Quercus* sp.) near the proposed expansion site. However, these trees will be avoided and no disturbance will occur within the driplines of these trees. Therefore, the project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. No impact would occur.

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

No Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State Habitat Conservation Plan has been approved or adopted for any portion of the project area. No impact would occur.

3.5 CULTURAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V. Cultural Resources. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

3.5.1 ENVIRONMENTAL SETTING

PREHISTORIC SETTING

In an attempt to unify the various hypothesized cultural periods in California, Fredrickson proposed an all-encompassing scheme for cultural development, while acknowledging that these general trends may manifest themselves differently and there may be some variation between sub-regions. These general cultural periods (Paleo-Indian, Early, Middle and Late Archaic, and Emergent periods) are used here in connection with the North-Central Sierra Nevada chronology because of their relevancy to the lower foothill region of the project in the vicinity of Folsom.

The Late Pleistocene Pattern and Period (>10,000 Before Present [B.P.]) in the foothill and eastern Sacramento Valley is practically non-existent. Sites CA-SAC-370 and CA-SAC-379, located near Rancho Murieta, produced numerous bifaces, cores, and raw materials from gravel strata estimated to be between 12,000 and 18,000 years in age. Early Holocene Pattern and Period (circa [ca.] 10,000–7000 B.P.) was first defined by Bedwell (1970) as a human adaptation to lake, marsh, and grassland environments that were prevalent at this time. Appearing after 11,000 years B.P., the tradition slowly disappeared ca. 8000–7000 B.P.

During the Archaic Pattern and Period – (ca. 7000–3200 B.P.), the climate in the valleys and foothills of Central California becomes warmer and dryer, and millingstones are found in abundance.

The Early and Middle Sierran Pattern (ca. 3200–600 B.P.) evidences an expansion in use of obsidian, which is interpreted with reservation to indicate an increase in regional land use, and the regular use of certain locales. During this time, a much heavier reliance on acorns as a staple food develops, and supports large, dense populations.

During the Late Sierran Period (ca. 600–150 B.P.), archaeological village sites generally correspond to those identified in the ethnographic literature. Diagnostic artifacts are small contracting-stem points, clam shell disk beads, and trade beads introduced near the end of the period, marking the arrival of European groups (Beardsley 1954:77–79; Elsasser 1978:44; Fredrickson 1984).

ETHNOGRAPHIC SETTING

Ethnographically, the project site is situated in the Nisenan (sometimes referred to as the Southern Maidu) sphere of influence. The Nisenan territory included the drainages of the Yuba, Bear, and American rivers, and the lower drainages of the Feather River, extending from the crest of the Sierra Nevada to the banks of the Sacramento River. In the Nisenan territory, several political divisions, constituting tribelets, each had their own respective headmen who lived in the larger villages. However, it is not known which of these larger population centers wielded more influence than others, although they were all located in the foothill areas. In general, more substantial and permanent Nisenan villages were not established on the valley plain between the Sacramento River and the foothills, although this area was used as a rich hunting and gathering ground.

HISTORIC SETTING

Early European travels through or near the western end of the project area included Gabriel Moraga and a group of Spanish explorers in 1806–1808, and fur trappers and explorers in the 1820s. Jedediah Smith led a group of trappers along the edge of the foothills to the American River in search of a pass over the Sierra Nevada in 1826 (Flint et al. 2000). Kit Carson and John C. Fremont crossed the mountains near Lake Tahoe and descended to Sutter's Fort along the South Fork of the American River in 1844.

A number of historic mining districts are near the project area, including Folsom, Shingle Springs, Placerville, Pacific, and White Rock (Clark 1992). An elaborate network of ditches and flumes were constructed beginning in the mid-19th century to provide power for miners. As the call for hydraulic power increased, so did the size of the ditches, at first providing water for placer mining, and later providing water to the agriculture of the region. One of the larger projects was the South Fork Canal Company, formed in 1851 (Starns 2001). The canal was built in 1852 at a cost of approximately $400,000, and took water from the South Fork American River above Pollock Pines and transported it by flume to Placerville. A network of ditches and flumes controlled by the South Fork Canal Company crossed the region between Weber Creek and the South Fork. Over time, partners in the company came and went, including a group of stockholders who planned a resort on Reservoir Hill, to be served by the Canal. The company changed hands numerous times, with numerous partners each holding a small interest in the venture. In 1873, the company was sold to the El Dorado Water and Deep Gravel Mining Company; and after several other owners, the system eventually was sold in 1919 to the El Dorado Water Company, the predecessor of the EID.

Ranching and cattle and sheep grazing in the foothill region began during the gold rush to supply miners, and continued to supply travelers, as well as shipping to local towns, even as the gold rush began to die down. By the 1880s, fruit orchards covered the foothills. Grazing became one of the biggest industries in El Dorado, as well as several neighboring counties in the 1870s. The foothills and Sierra Nevada offered an advantage to cattlemen in that the areas were unsettled, so there was little competition for the land. Sheepherders quickly followed, including numbers of Basques who carved figures that can still be seen on aspen trees today (Supernowicz 1996).

Beginning in 1856, Sacramento Valley Railroad linked Folsom and areas to the east with and Sacramento. From Folsom, stagecoaches took the passengers to the gold fields or smaller settlements in the area, and freight was transported over the same routes by wagon. The railroad thrived in the Folsom area until declining in 1870, due in part to fires that decimated Folsom in 1866 and 1868, destroying much of the business district. Completion of the Trans-Sierran railroad in 1860 also contributed to the eventual downfall of the Sacramento Valley Railroad (Thomas and West 1880, in Maniery 21992).

PREVIOUS CULTURAL STUDIES

A records search conducted by Far Western Anthropological Research Group Inc. at the North Central Information Center in February 2019 indicated that there have been 12 previous studies within 1/8 mile of the project area of potential effects; seven of these overlap with the project site. All of the studies are more than 10 years old, and a few are more than 30 years old. Because of the age of these studies, AECOM conducted a field investigation of the project site on March 12, 2019.

The project site has been disturbed by construction, and there was an extensive irrigation system throughout the project site including a pipeline that traverses through part of the site. Disturbed soil exposed by a previous geological study was inspected for the presence of buried archaeological deposits. The undisturbed portion of the site was covered with short new growth grasses and soap root. No cultural resources were observed. There were no observed artifacts at the proposed solar PV array site at the EDH WWTP in El Dorado County.

KNOWN CULTURAL RESOURCES

Eight archaeological and historical resources are known to exist within 1/8 mile of the project area of potential effects. None of these appears to overlap with the project site. One site, P-09-000168 (CA-ELD-80/H) is a very extensive complex of mining features that does not appear to extend into the area of the EDH WWTP.

3.5.2 DISCUSSION

a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

The project site is not known to have any historical resources as defined by Section 15064.5 of CEQA. No impact would occur.

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

Previous studies and the current investigation did not result in the identification of archaeological resources in the proposed project site as defined by Section 15064.5 of CEQA. Because the project is in a non-depositional environment subsurface, deposits are most likely not present. However, if an archaeological resource were to be discovered, the mitigation measure below would reduce potential impacts to a less than significant level.

Mitigation Measure CUL-1: Address Previously Undiscovered Historic Properties and Archaeological Resources.

EID shall implement the following measure to reduce or avoid impacts on undiscovered historic properties and archaeological resources. If interested Native American Tribes provide information demonstrating the significance of the project location and tangible evidence supporting the determination the site is highly sensitive for prehistoric archaeological resources, EID will retain a qualified archaeologist 1) monitor for potential prehistoric archaeological resources during initial ground disturbing activities, 2) prepare a worker awareness brochure, and 3) invite tribal representatives to review the worker awareness brochure.

If buried or previously unidentified historic properties or archaeological resources are discovered during project activities, all work within a 100-foot radius of the find shall cease. EID shall retain a professional archaeologist meeting the Secretary of the Interior's Professional Standards for Archaeologists to assess the discovery and

recommend what, if any, further treatment or investigation is necessary for the find. Interested Native American Tribes will also be contacted. Any necessary treatment/investigation shall be developed with interested Native American Tribes providing recommendations and shall be coordinated with the State Historic Preservation Officer and Reclamation, if necessary, and shall be completed before project activities continue in the vicinity of the find.

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

There has been no indication or evidence that the area has been used for human burials in the recent or distant past; therefore, human remains are unlikely to be encountered. If human remains are encountered, the mitigation measure below would reduce potential impacts to a less than significant level.

Mitigation Measure CUL-2: Avoid Potential Effects on Undiscovered Burials.

EID shall implement the following measures to reduce or avoid impacts related to undiscovered burials. In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, all potentially damaging ground-disturbance in the area of the burial and a 100-foot radius shall halt and the El Dorado County Coroner shall be notified immediately. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, then Federal laws governing the disposition of those remain would come into effect. Specifically, the Native American Graves Protection and Repatriation Act (NAGPRA), Pub L. 101-601, 25 U.S.C. 3001 et seq., 104 Stat. 3048 requires federal agencies and institutions that receive federal funding to return Native American cultural items to lineal descendants and culturally affiliated Indian Tribes and Native Hawaiian organizations. Cultural items include human remains, funerary objects, sacred objects, and objects of cultural patrimony. NAGPRA also has established procedures for the inadvertent discovery of Native American cultural items on Federal or Tribal lands, which includes consultation with potential lineal descendants or Tribal officials as part of their compliance responsibilities.

California law recognizes the need to protect Native American human burials, skeletal remains, and items associated with Native American burials from vandalism and inadvertent destruction. EID shall ensure that the procedures for the treatment of Native American human remains contained in California Health and Safety Code Sections 7050.5 and 7052 and Public Resources Code Section 5097 are followed.

3.6 ENERGY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. Energy. Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

3.6.1 ENVIRONMENTAL SETTING

The new solar PV system would have a 1.88-kW capacity capable of generating about 2.97 GWh annually. When combined with the existing solar PV array, the total system generation would be about 4.09 GWh annually. The purpose of this project is to increase the renewable energy produced by the solar panels to offset consumed conventional power produced by the regional electric utility PG&E, and reduce utility billing costs and provide long-term energy cost savings for operation of EDH WWTP.

3.6.2 DISCUSSION

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

The proposed project would not have a substantial impact on energy consumption or conservation. The project would increase the renewable energy used by EID. The project would not increase consumption or inefficient energy use. Construction equipment and haul trucks would consume fuel during the construction process; however, the site's small size and relative lack of grading would minimize the energy consumed.

During operations, the project would require fuel for vehicles and equipment used by site maintenance workers. The minimal amount of electricity required during project operation would be greatly offset by the generation of electricity from the project, and the project's electricity demand would not constitute a wasteful, inefficient, or unnecessary use of energy. Potential impacts on base or peak energy demand would be less than significant.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The proposed project would not conflict with a state or local plan for renewable energy. The proposed project would directly support California's Renewable Portfolio Standard goal of increasing the percentage of electricity procured from renewable sources to 50 percent.

Because the proposed project would provide a new source of renewable energy supporting the state's energy goals, offset its fuel usage, and comply with fuel and energy efficiency regulations, the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and no impact would occur.

3.7 GEOLOGY AND SOILS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. Geology and Soils. Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

3.7.1 ENVIRONMENTAL SETTING

There are no known active faults in the project area. The nearest active fault is the Rescue Lineament-Bear Mountains Fault Zone, which lies more than 8 miles west of the project. As identified by the U.S. Department of Agriculture Soil Survey maps, the soils at the project site are Argonaut very rocky loam and Auburn extremely rocky silt loam. Youngdahl (1995) described the site as underlain by metavolcanic rocks associated with the Copper Hill Volcanics. The geotechnical study by Youngdahl indicated a range of soil grain sizes in the area, including silts, clays, sand, and gravels, both native and fill, underlain by metavolcanic bedrock.

3.7.2 DISCUSSION

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

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

The California Geological Survey does not list the County of El Dorado as a county affected by the Alquist-Priolo Earthquake Fault Zone (California Department of Conservation 2010). The faults that exist in the vicinity of the project site are not listed as surface fault ruptures, and there are no buildings for human occupancy expected to be constructed as part of the project. The hazards from fault ruptures are expected to be less than significant.

ii) Strong seismic ground shaking?

The site is near the Rescue Lineament-Bear Mountains Fault Zone, Western Bar Mountain Fault, and the Melones Fault, all considered potentially active. Because the recurrence interval is long and the slip rate is slow, the seismic hazards of the project area are considered relatively low. There are no buildings for human occupancy proposed as part of the project. The impact from strong seismic ground shaking is considered less than significant.

iii) Seismic-related ground failure, including liquefaction?

No portion of El Dorado County is located in a Seismic Hazard Zone (California Geological Survey identified areas prone to liquefaction and earthquake induced landslides). The project is not expected to be at risk from liquefaction hazards due to seismic activity. Impacts would be less than significant.

iv) Landslides?

As stated above, the project site is not located in a Seismic Hazard Zone. Impacts would be less than significant.

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

There is a potential for grading and construction activities to result in soil erosion. The mitigation measure below would reduce potential impacts to a less than significant level.

Mitigation Measure GEO-1: Prepare and Implement a Stormwater Pollution Prevention Plan.

EID or its approved construction contractor shall prepare and implement a stormwater pollution prevention plan (SWPPP) that contains Best Management Practices (BMPs) to reduce impacts from erosion and sedimentation during grading and excavation. This SWPPP shall conform to all erosion control standards adopted by EID. The SWPPP would be prepared to support application for a General Construction Activity Stormwater Permit (General Permit) from the Regional Water Quality Control Board (RWQCB). To obtain coverage under the State of California General Permit, a Notice of Intent (NOI) shall be filed with the RWQCB, in conjunction with submittal of an NOI to the RWQCB prior to ground-disturbing activities.

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

The geologic conditions indicate stable soils and underlying bedrock. There are no expected hazards from landslides, lateral spreading, or liquefaction due to the site's geological conditions. Impacts would be less than significant.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating direct or indirect substantial risks to life or property?

The proposed project would not include construction of habitable structures, and therefore is not expected to create substantial risks to life or property. Impacts would be less than significant.

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

The proposed project would not include the use of septic tanks or alternative wastewater disposal systems. No impact would occur.

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

There have been no known paleontological resources in El Dorado County, with the exception of one distorted ammonite. The project site does not contain any known fossil locations or known paleontological sites. Impacts would be less than significant.

3.8 GREENHOUSE GAS EMISSIONS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. Greenhouse Gas Emissions. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

3.8.1 ENVIRONMENTAL SETTING

Certain gases in the earth's atmosphere, classified as greenhouse gases (GHGs), play a critical role in determining the earth's surface temperature. A portion of the solar radiation that enters the atmosphere is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back toward space. This infrared radiation (i.e., thermal heat) is absorbed by GHGs within the atmosphere; as a result, infrared radiation released from the earth that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the "greenhouse effect," is responsible for maintaining a habitable climate on the earth. Without the naturally occurring greenhouse effect, the earth would not be able to support life as we know it. However, GHG emissions associated with human activities are likely responsible for intensifying the greenhouse effect, and have led to a trend of unnatural warming of the earth's atmosphere and oceans, with corresponding effects on global circulation patterns and climate (IPCC 2014).

GHGs are present in the atmosphere naturally; are released by natural and anthropogenic (human-caused) sources; and are formed from secondary reactions taking place in the atmosphere. The following are GHGs that are widely accepted as the principal contributors to human-induced global climate change:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Hydrofluorocarbons
- Perfluorocarbons
- Sulfur hexafluoride

Global warming potential (GWP) is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to CO_2. The concept of CO_2 equivalents (CO_2e) is used to account for the different GWP potentials of GHGs to absorb infrared radiation. The GWP of a GHG is based on several factors, including the relative effectiveness of a gas in absorbing infrared radiation, and the length of time (i.e., lifetime) that the gas remains in the atmosphere ("atmospheric lifetime"). The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main GHGs that have been attributed to human activity are CH_4, which has a GWP of 21, and N_2O, which has a GWP of 310 (UNFCC 2013). For example, 1 ton of CH_4 has the same contribution to the greenhouse effect as approximately 21 tons of CO_2. GHGs with lower emissions rates than CO_2 may still

contribute to climate change because they are more effective at absorbing outgoing infrared radiation than CO_2 (i.e., high GWP).

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

MANDATORY GREENHOUSE GAS REPORTING RULE

On October 30, 2009, the EPA published the final version of the Mandatory Greenhouse Gas Reporting Rule in the *Federal Register*. In general, compliance with this national reporting requirement would provide EPA with accurate and timely GHG emissions data from facilities that emit 25,000 metric tons (MT) or more of CO_2 per year. An estimated 85 percent of the total U.S. GHG emissions, from approximately 10,000 facilities, are covered by this final rule. Subsequent rulings have expanded the emissions sources required to report emissions data, and now include oil and natural gas industries, industrial wastewater treatment plants, and industrial landfills.

EXECUTIVE ORDER S-3-05

The goal of this Executive Order, signed by Governor Arnold Schwarzenegger on June 1, 2005, is to reduce California's GHG emissions to year 2000 levels by 2010, 1990 levels by 2020, and 80 percent below the 1990 levels by the year 2050. In 2006, this goal was reinforced with the passage of Assembly Bill (AB) 32.

GLOBAL WARMING SOLUTIONS ACT OF 2006 AND EXECUTIVE ORDER S-20-06

The Global Warming Solutions Act of 2006 set the same overall GHG emissions reduction goals as outlined in Executive Order S-3-05. The Act further requires that ARB create a plan that includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06, signed on October 18, 2006, further directed state agencies to begin implementing the Act, including the recommendations made by the State of California's Climate Action Team.

SENATE BILL 97

Senate Bill 97 (Chapter 185, Statutes of 2007) required the Governor's Office of Planning and Research to develop recommended amendments to the CEQA Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

The EDCAQMD has no regulations addressing GHG emissions. EDCAQMD has not established quantitative significance thresholds for evaluating GHG emissions in CEQA analyses. Each project is evaluated on a case-by-case basis using the most up-to-date calculation and analysis methods. Therefore, to establish additional context in which to consider the order of magnitude of the project's construction-related GHG emissions, this analysis considers the following guidelines on the levels of GHG emissions that would constitute a cumulatively considerable incremental contribution to climate change:

- The San Luis Obispo Air Pollution Control District has adopted 1,150 MT CO_2e as a project-level GHG significance threshold that would apply to annual operational and amortized construction emissions from land use development projects (SLOAPCD 2012).

- The SCAQMD GHG Working Group has proposed a significance screening level of 3,000 MT CO_2 per year for residential and commercial projects (SCAQMD 2010).

- The Sacramento Metropolitan Air Quality Management District (SMAQMD) has a construction phase GHG emissions thresholds of 1,100 MT CO_2e per year (SMAQMD 2015).

Many California air districts, such as the SMAQMD and SCAQMD, recommend that construction emissions associated with a project be amortized over the life of the project (typically 30 years) and added to the operational emissions. EDCAQMD's *CEQA Guide to Air Quality Assessment* includes numerous references to methodologies developed by SMAQMD and SCAQMD for criteria pollutant emissions. Therefore, in light of the lack of a specific GHG threshold or guidance from EDCAQMD, it is considered appropriate to reference methodologies and guidance from those agencies when discussing GHG emissions. The information regarding other jurisdictions' thresholds are provided for comparative purposes only. These thresholds are not applicable to proposed EDH WWTP solar PV array project, and are not intended to be used for assessing the environmental impact of associated GHG emissions.

This analysis includes a quantification of total modeled construction-related GHG emissions. Those emissions are then amortized and evaluated as a component of the project's operational emissions over the 30-year life of the project. The intent of this analysis to put project-generated GHG emissions into the appropriate statewide context with regard to whether the project's contribution of GHG emissions would reach the level that would have a considerable incremental contribution to global climate change. The GHG emission modeling results are included in Appendix B.

3.8.2 DISCUSSION

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

Construction-Related Impact

Short-term construction of the project would generate GHG emissions. Construction-related GHG emissions would be generated by vehicle engine exhaust from construction equipment, haul trips, and construction worker trips. GHG emissions generated by the project would consist primarily of CO_2. Emissions of other GHGs, such as CH_4 and N_2O, are important with respect to global climate change; however, even when considering the higher GWPs of these other GHGs, their contribution to total GHG emissions is small compared with CO_2 emissions from the project's emission sources (i.e., construction equipment and on-road vehicles). However, where appropriate emission factors were available, emissions of CH_4 and N_2O were included in the analysis of the project.

Construction of the project would generate approximately 164 MT CO_2e over the entire construction period, which would last up to 9 months. These emissions include heavy-duty construction equipment, haul trucks, and construction worker vehicles. To estimate amortized construction emissions, the total construction-related GHG

emissions of 164 MT CO_2e associated with the project are divided by 30 years (approximately 5.5 MT CO_2 per year).

As mentioned earlier, many air districts recommend that construction-related GHG emissions be amortized over the lifetime of the project, and compared to the thresholds of significance along with operational GHG emissions. Because the project does not include additional GHG emissions associated with operations, the amortized construction-related emissions of 5.5 MT CO_2e would be compared to any proposed or adopted GHG thresholds of significance. Because EID and EDCAQMD do not have adopted thresholds, the amortized construction emissions are discussed in a statewide context with regard to other proposed or adopted thresholds. The amortized construction-related GHG emissions would be less than the adopted or proposed GHG levels or thresholds identified for SLOAPCD, SCAQMD, or SMAQMD as previously discussed. Therefore, the project would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment. This construction-related impact would be less than significant.

Post-Project Operation-Related Impact

Implementation of the project would not require or result in additional operational and maintenance activities above existing conditions. Therefore, no impact would occur as a result of post-project operation.

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

Construction-Related Impact

None of the measures listed in the ARB *Climate Change Scoping Plan* (ARB 2008), which contains the main strategies that California would use to achieve emission reductions necessary to meet the goals of AB 32, relate directly to construction activities. The scoping plan includes some measures that would indirectly address GHG emissions levels associated with construction activity, such as the phasing in of cleaner technology for diesel engine fleets (including construction equipment) and the development of a low-carbon fuel standard. However, successful implementation of these measures depends primarily on the development of laws and policies at the state level. It is assumed that those policies formulated under the mandate of AB 32 that apply to construction-related activity, either directly or indirectly, would be implemented during construction of the project, if those policies and laws were in fact developed and adopted before the start of project construction. Therefore, project construction is not expected to conflict with the scoping plan.

As discussed earlier, the project would not generate GHG emissions that would have a significant impact on the environment. Neither EID nor any other agency with jurisdiction over the project has adopted climate change or GHG reduction measures with which the project would conflict. The project would not conflict with any applicable plan, policy, or regulation for the purpose of reducing GHG emissions. Therefore, this construction-related impact would be less than significant.

Post-Project Operation-Related Impact

Implementation of the project would not require or result in additional operational and maintenance activities above existing conditions. Therefore, no impact would occur as a result of post-project operation.

3.9 HAZARDS AND HAZARDOUS MATERIALS

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX.	**Hazards and Hazardous Materials. Would the project:**				
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g)	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☒	☐

3.9.1 ENVIRONMENTAL SETTING

The location of the EDH WWTP is classified as an area that probably does not contain naturally occurring asbestos (Department of Conservation 2000); however, there is a potential for asbestos to occur on the site. Surrounding lands within a 3-mile radius have been identified as likely to contain naturally occurring asbestos. In addition, naturally occurring asbestos may be present in or near geologic fault lines and fault zones.

The installation of the proposed solar PV arrays would require the use of fuels, oils, grease, and other fluids in equipment used to grade, excavate, or move materials onto the site that may be hazardous if released.

Operation of the proposed solar PV arrays would not further introduce the use of hazardous materials onto the EDH WWTP. The array's operation would not result in use, storage, or release of hazardous materials.

3.9.2 DISCUSSION

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

Construction would involve soil disturbance for placement of electrical conduit and surface preparation for concrete pads. Some grading may also be required to provide the best orientation of the arrays. The use of heavy construction equipment on the project site would involve hazardous materials such as gas and diesel fuels, oils, and lubricants. Although the storage, handling, and use of the construction-related hazardous materials would be in accordance with applicable federal, State, and local laws, the potential for an accidental spill still exists. The potential of an accidental spill, and the potential danger of such a spill, would be reduced to less than significant with implementation of mitigation measure HAZ-1.

Operation of the project would not involve the use of hazardous materials. There are no liquid components contained in the solar panel modules. Therefore, there are no reasonably foreseeable accidents involving the storage and use of these materials on site during operation.

Mitigation Measure HAZ-1: Prepare and Implement a Construction Site Health and Safety Plan.

EID or its approved construction contractor shall prepare and implement a construction site health and safety plan prior to ground-disturbing activities. The plan shall require that construction-related hazardous materials and hazardous wastes be staged and stored away from stream channels and steep banks to prevent these materials from entering surface water in the event of an accidental release and liquid materials be stored in existing EDH WWTP facilities with containment features to prevent accidental release. This includes materials staged for expected use, materials in equipment and vehicles, and waste materials. The construction site health and safety plan shall be implemented throughout the duration of construction.

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

As discussed previously in Section 3.3, "Air Quality," the project is not located in an area designated as "likely to contain asbestos"; therefore, the project would not expose nearby receptors to substantial asbestos concentrations.

Given the location of the project, the distance of the project area to sensitive receptors, and the project's compliance with applicable EDCAQMD requirements, the project would not expose nearby receptors to hazardous materials. As discussed in Section 3.3, "Air Quality," EDCAQMD requires all projects to implement Rule 202 (Visible Emissions), Rule 205 (Nuisance), Rule 223 (Fugitive Dust—General Requirements), Rule 223-1 (Fugitive Dust—Construction, Bulk Material Handling, Blasting, Other Earthmoving Activities and Carryout and Trackout Prevention), Rule 223-2 (Fugitive Dust—Asbestos Hazard Mitigation), and Rule 300 (Open Burning). This impact is considered less than significant.

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

The proposed solar PV array project site is not located within 0.25 mile of any school. No impact would occur.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?

The proposed solar PV array project site is not on the EPA list of Superfund hazardous waste sites, nor is it on the State of California Department of Toxic Substances Control Hazardous Waste and Substance Site list (the Cortese list). No impact would occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

The proposed solar PV array project site is not in a designated airport land use plan area, nor is it located within 2 miles of a public airport. The Cameron Park Airport is approximately 4 miles northeast of the project site. No impact would occur.

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

Construction and operation of the project would not interfere with any adopted emergency response plan or emergency evacuation plan, including any EID emergency response plan or the El Dorado County Operational Area Multi-Hazard Functional Emergency Operations Plan, as implemented by the County Office of Emergency Services (OES) of the County Sheriff's Department. No impact would occur.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Project construction would involve some soil disturbance and grading for the conduit and design surface in grasslands. However, vegetation removal associated with the construction activities is not anticipated to result in significant fire hazards. Additionally, during operation, the areas around the solar arrays would be covered by crushed gravel, which would further reduce the risk of wildland fire on adjacent grasslands should there be an electrical problem with the solar arrays. The project occurs at an established EID facility that is already served by fire protection through the El Dorado Hills Fire Department. Impacts would be less than significant.

3.10 HYDROLOGY AND WATER QUALITY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. Hydrology and Water Quality. Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☒	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that there the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) Result in substantial erosion or siltation on- or off-site;	☐	☒	☐	☐
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☐	☒
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☐	☒
iv) Impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☒	☐	☐

3.10.1 ENVIRONMENTAL SETTING

The EDH WWTP is on gently sloping topography where the primary direction of surface water flow is to the west and southwest. There are numerous intermittent waterways that flow westerly to intersect with Carson Creek, both north and south of the EDH WWTP.

Carson Creek, a perennial stream, flows in a north-south direction along the western boundary of the EDH WWTP. An existing unnamed ephemeral drainage feature is located east of the project site. This drainage feature originates on the adjacent Valley View property, and flows westerly towards the existing EDH WWTP reservoir before it enters a channelized section and flows to the south around the reservoir and other EDH WWTP features. Surface water from this intermittent waterway ultimately enters Carson Creek.

3.10.2 DISCUSSION

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

There is potential for sediment and erosion to occur in association with project construction that could result in the violation of water quality standards or waste discharge requirements. By implementing Mitigation Measure GEO-1, as discussed in Chapter 3.7, "Geology and Soils," and implementing erosion control measures and other BMPs as part of a SWPPP, the potential for violation would be minimized, and impacts would be reduced to a less than significant level.

Mitigation Measure HYD-1: Implement Mitigation Measure GEO-1.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that there the project may impede sustainable groundwater management of the basin?

The project does not involve extraction of groundwater and would not deplete groundwater supplies. The project is not located in a known groundwater recharge basin, and proposed facilities would not interfere substantially with groundwater recharge. No impact would occur.

c i-iv) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. Result in substantial erosion or siltation on- or off-site;

ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

iv. Impede or redirect flood flows?

Construction of the proposed project has the potential to alter the drainage patterns on the immediate location of the solar PV arrays, which could result in erosion on the site, and increase the rate or amount of runoff by creating impermeable surfaces. The potential increase in runoff is not expected to result in flooding either on- or off-site. Mitigation Measure HYD-1 would be implemented to minimize erosion and reduce the potential impacts to a less than significant level. The proposed project would not contribute runoff water; create additional sources of polluted runoff; or impede or redirect flood flows.

The proposed solar PV array layout avoids impeding flows of the unnamed drainage feature entering the EDH WWTP property from the east. The solar PV array layout excludes a 120-foot-wide zone corresponding to the unnamed drainage feature. No impact to the flows of this feature would occur.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

The project site is not located near a body of water and would not be subject to seiche or tsunami. The proposed project site would not pose a risk to release pollutants associated with inundation. No impact would occur.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The proposed project would not result in conflicts with implementation of a water quality control plan or sustainable groundwater management plan. The proposed project would not result in conditions that would alter or contribute to conflicts with an applicable water quality control plan or sustainable groundwater management plan. No impact would occur.

f) Otherwise substantially degrade water quality?

The proposed project would not substantially degrade water quality by introducing pollutants that may be released by inundation or altered drainage patterns. In addition, measures implemented to control potential soil erosion would minimize risk of effects to surface water quality in local waterways. Mitigation Measure HYD-1 would reduce potential impacts to a less than significant level.

3.11 LAND USE AND PLANNING

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. Land Use and Planning. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

3.11.1 ENVIRONMENTAL SETTING

The proposed project is located at Assessor's Parcel Number 118-02-010. It is currently zoned for Open Space and designated as Public Facilities in the County General Plan. The site is bounded on the north, east, and south by land designated Open Space or Multi-use Open Space by the approved Valley View Specific Plan (El Dorado County 1998). These adjacent Open Space designations would serve as a buffer between the public utility use of the project site and the residential areas of the Valley View development. The Valley View Specific Plan provides for development on approximately 2,037 acres of land between Latrobe Road and US 50, including areas to the north, east, and south of the proposed project. Some of the plan near the proposed project has been built out as single-family residential, as shown in Figure 1. The proposed solar PV array project site is located near Latrobe Road and the El Dorado Hills Business Park.

The project is proposed by EID, a special district that supplies water to customers throughout much of El Dorado County. Pursuant to Government Code sections 53091(D) and (E), many of EID's activities are not subject to local zoning or land use requirements, as stated below.

> *"(d) Building ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, wastewater, or electrical energy by a local agency.*
>
> *(e) Zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code, or electrical substations in an electrical transmission system that receives electricity at less than 100,000 volts. Zoning ordinances of a county or city shall apply to the location or construction of facilities for the storage or transmission of electrical energy by a local agency, if the zoning ordinances make provision for those facilities."*

As a special district with equal authority, EID is exempt from local land use controls and the goals and policies within the County's General Plan and Zoning Ordinance. However, EID aims to comply with the General Plan and Zoning Ordinance and considers these documents in evaluating impacts.

3.11.2 DISCUSSION

a) Physically divide an established community?

This project would be within the existing EDH WWTP site, and would not result in the physical division of any established community. No impact would occur.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

The El Dorado County Zoning Ordinance allows for public utility service facility uses within Open Space zoning. Public facilities are permitted in the Public Facilities General Plan designation. Solar facilities may be permitted in any zone with a conditional use permit. The proposed project involves the expansion of a solar array to supplement power at the EDH WWTP, which is a public facility for the use of treating wastewater. Additionally, as previously stated, EID is exempt from El Dorado County Zoning Ordinance No impact would occur.

3.12 MINERAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. Mineral Resources. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

3.12.1 ENVIRONMENTAL SETTING

According to the California Geological Survey's Mineral Land Classification of El Dorado County, California (Department of Conservation 2001), the project site is not located in an area designated as a Mineral Resource Zone (MRZ) 2a or 2b. MRZ 2a and 2b are classifications that indicate land containing mineral resources of known economic value to the county or state. The site is classified as MRZ 4 (unknown resource significance) or MRZ 3a (known but undetermined resource significance) for all purposes. There are no mineral extraction sites on or in the vicinity of the project site. The project site is also not included in any Mineral Resources designation of the El Dorado General Plan.

3.12.2 DISCUSSION

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

The project is not located in an area of a known mineral resource that would be of value to the region and the residents of the state. No impact would occur.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

The project is not located in a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. No impact would occur.

3.13 NOISE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. Noise. Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

3.13.1 ENVIRONMENTAL SETTING

The area around the project site has been developed significantly with residential developments, commercial, highway commercial, and light industrial land uses. The most significant source of noise generated in the project area is associated with vehicular traffic on Latrobe Road; and to a lesser extent, neighborhood activity noise.

3.13.2 DISCUSSION

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

The El Dorado County General Plan identifies noise level limits for sensitive land uses (schools, hospitals, churches, and residential). The maximum level (L_{max}) identified for these receptors is 75 decibels (dB), and the highest hourly average noise level (L_{eq}) is 55 dB (El Dorado County 2004). Construction activities may result in temporary noise level increases due to the operation of heavy construction, and possibly blasting operations. The noise levels during these activities may reach 80 to 84 dB when measured at 50 feet from the source.

The nearest sensitive receptors to proposed clearing and grubbing activities are located approximately 400 feet from the acoustical center of the project site, with partial shielding due to intervening topography. Noise levels decrease with distance from the source and shielding effects provided by natural topography. Accounting for distance and partial shielding effects, temporary project construction activities would result in hourly and maximum noise levels of approximately 57 A-weighted decibels (dBA) L_{eq} and 67 dBA L_{max}, respectively, at the nearest noise-sensitive receptor. Proposed project construction activities would comply with the County's

maximum noise level standard; however, hourly project construction noise levels would exceed the County's hourly noise level standard by +2 dBA. For this reason, this impact is considered potentially significant.

Mitigation Measure NOI-1: Implement Noise-Reducing Construction Practices.

The EID or its approved construction contractor shall implement the following measures during construction activities, where construction occurs within 400 feet of a sensitive receptor, to avoid and minimize construction noise effects on sensitive receptors:

- All construction equipment shall be equipped with noise-reduction devices, such as mufflers, to minimize construction noise; and all internal combustion engines will be equipped with exhaust and intake silencers, in accordance with manufacturers' specifications.
- The use of bells, whistles, alarms, and horns shall be restricted to safety warning purposes only.
- Mobile and fixed construction equipment (e.g., compressors and generators), construction staging and stockpiling areas, and construction vehicle routes shall be located at the most distant point feasible from noise-sensitive receptors.
- The EID or its approved construction contractor shall ensure that all heavy trucks are properly maintained and equipped with noise-control (e.g., muffler) devices, in accordance with manufacturers' specifications, at each work site during project construction, to minimize construction traffic noise effects on sensitive receptors.

Implementation of Mitigation Measure NOI-1 would reduce the potentially significant impact associated with temporary construction noise to a less than significant level, because construction noise levels would be reduced through adjusting operational practices (limiting bell, whistle, and horn use; not allowing equipment to idle for extended periods of time), maintaining operational mufflers, and locating any stationary equipment as far as possible from receptors, or shielding stationary noise with on-site equipment or materials. Therefore, the long-term impacts from project-generated noise would be less than significant with mitigation incorporated.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Construction activities may generate temporary groundborne vibration from equipment movement and operation. The Federal Transit Administration (FTA) has developed criteria for human annoyance, and California Department of Transportation (Caltrans) has developed criteria for potential structural damage to adjacent buildings. To determine project vibration impacts for human annoyance and structural damage, these FTA and Caltrans standards are commonly applied as an industry standard. FTA recommends 72 Velocity Decibels (VdB) at residential uses to avoid human annoyance (FTA 2018); Caltrans recommends 0.3-inch-per-second peak particle velocity (PPV) at residential uses to avoid structural damage to newer buildings (Caltrans 2013).

Based on FTA reference vibration levels, vibration levels associated with the use of a large bulldozer is 0.089 inches per second PPV (87 VdB) at 25 feet. The nearest vibration-sensitive uses to proposed project construction activities are residential uses east of Blackstone Parkway, approximately 275 feet away. At this distance, the highest vibration levels generated by project construction equipment would attenuate to 0.002 PPV and 56 VdB. The vibration generated by equipment is not anticipated to be excessive or significant.

Long-term operational-related activities, such as those associated with the new solar array at the EDH WWTP, would not include any major new sources of groundborne noise or vibration. Furthermore, the nearest vibration-sensitive receptors are more than 275 feet away, a sufficient distance to have attenuated and dampened potential groundborne vibration and groundborne noise impacts.

Short-term construction or long-term operation of the project would not result in the exposure of persons to or generation of excessive groundborne noise or vibration levels. For these reasons, this impact is considered less than significant.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The project is not located in the vicinity of a private airstrip or an airport land use plan or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, and the project would not expose people residing or working in the project area to excessive noise levels. The Cameron Park Airport is located approximately 4 miles northeast of the project site. In addition, the project site is not located within an adopted or proposed airport land use plan. For these reasons, no impact would occur.

3.14 POPULATION AND HOUSING

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. Population and Housing. Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.14.1 ENVIRONMENTAL SETTING

The project site is located on the EDH WWTP property. The north, east, and south sides of the property are bounded by the approved Valley View Specific Plan area. The project site is bound by Latrobe Road on the west, beyond which are office buildings.

3.14.2 DISCUSSION

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

The project would not induce unplanned population growth in the area. The proposed project would result in generating renewable electric energy that would be sold to PG&E and made available for public consumption. Revenues received from the sale would offset the cost to operate the EDH WWTP. Assuming an 18.7-KWh average daily demand for households in California, the production of 5.4 GHw from the proposed solar PV array would supply about 470 homes. No impact would occur.

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

There are no people residing or housing located on the EDH WWTP project site. Implementation of the proposed solar PV array project would not displace people or residences. The project site is designated as a public facility on the El Dorado County General Plan Land Use map, and is zoned as Open Space. No impact would occur.

3.15 PUBLIC SERVICES

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

3.15.1 ENVIRONMENTAL SETTING

The proposed solar PV array project site is within the boundaries of an existing public service facility that has been in operation since 1961. The EDH WWTP provides wastewater treatment services for municipal, industrial, and commercial land uses in western El Dorado County, with an average dry-weather flow capacity of 5.4 million gallons per day (EID 2007).

3.15.2 DISCUSSION

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

Construction and operation of the project would not affect the level of any public service. Implementation of the proposed solar PV arrays would contribute to reducing the EDH WWTP operating costs by generating revenue from the sale of electric energy to PG&E. The reduction in operating costs would further enable EID to provide public services to its customers.

Fire protection?

The proposed project would construct a new solar PV system. Crushed gravel would be placed around each array to reduce fire hazards and allow for emergency access between the two arrays. See Section 3.17, "Transportation," for an additional discussion related to emergency access during construction.

The project occurs at an established EID facility that is already served by fire protection through the El Dorado Hills Fire Department. The proposed project would not include any new housing or businesses that would increase demand for fire protection services and facilities. The proposed project would not affect the El Dorado County Fire District's response times or other performance objectives. The project would not create a fire hazard or affect access to the project site or adjacent properties. Therefore, construction and operation of the project would not affect fire protection at the project site or within the service area. No impact would occur.

Police protection?

Police protection services are provided by the El Dorado County Sheriff's Department. The proposed project would not increase the population in the project area because of new housing or employment opportunities that would increase demand for police protection services or require additional Sheriff's Department staffing to maintain its officer-to-population service ratio. The project is already fenced, so construction and operation of the project would not affect police protection at the project site or within the service area. No impact would occur.

Schools?

The nearest school to the project site is Brooks Elementary, located approximately 2 miles northwest of the project site. Implementation of the proposed project would not provide any new housing that would generate new students or increase the demand for school services and facilities. No impact would occur.

Parks?

The Creekside Green Park is located approximately 0.8 mile west of the project site. There are no community parks within the vicinity of the project site. The project would not induce population growth, and therefore would not increase the need for parks. No impact would occur.

Other public facilities?

No other public facilities, such as libraries, are in the vicinity of the proposed project site. Construction and operation of the project would not create a need for additional public facilities. No impact would occur.

3.16 RECREATION

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. Recreation.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

3.16.1 ENVIRONMENTAL SETTING

The proposed project would occur within the boundaries of the EDH WWTP. The closest recreational facility is Valley View Sports Park, about 5,000 feet to the southeast of the EDH WWTP. The Creekside Green Park is located approximately 0.8 mile west of the project site. There are no community parks within the vicinity of the project site.

3.16.2 DISCUSSION

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

The proposed project would not increase the population in the project area because of new housing or employment opportunities. The proposed project would not create additional recreational demand that would increase the use of existing neighborhood and regional parks or other recreational facilities. No impact would occur.

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

The proposed project would install additional PV solar panels at the existing EDH WWTP. The proposed project would not include recreational facilities or create additional recreational demand that would require the construction or expansion of recreational facilities. No impact would occur.

3.17 TRANSPORTATION

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. Transportation. Would the project:				
a) Conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☒	☐	☐
d) Result in inadequate emergency access?	☐	☒	☐	☐

3.17.1 ENVIRONMENTAL SETTING

No State highways would be used or affected by project-related construction traffic. The project site would be accessed from existing local roadways. Main access to the project site would be from Latrobe Road, south of the project site (see Figure 2 in Chapter 2, "Project Description").

According to the *El Dorado County Bicycle Transportation Plan* (El Dorado County Transportation Commission 2010), bikeways are not planned in the project area along Latrobe Road. No transit facilities are located in the project area. No railroads are located in the project area. The project site is located approximately 4.8 miles southwest of the Cameron Airpark. However, as noted in Section 3.12, "Noise," the proposed project is outside of the area of influence for the Cameron Airpark.

No federal plans, policies, regulations, or laws related to transportation/traffic apply to the project.

(Caltrans is responsible for planning, designing, constructing, operating, and maintaining all state-owned roadways. Caltrans prepares various planning documents for its transportation facilities throughout the state. The goals established for specific highways are documented in transportation concept reports. The *Transportation Corridor Concept Report: United States Highway 50* (Caltrans 2010) describes the 20-year improvement concept for U.S. 50. The concept presented for Segment 13, the segment closest to the Project site, is a four-lane rural freeway. Segment 13 extends from the Cedar Grove exit to the point 0.67 mile east of Sly Park Road in El Dorado County.

Operation of the roadway system is typically described in terms of level of service (LOS). It is designated by the letters A through F, with A corresponding to the lowest levels of congestion, and F corresponding to the highest level of congestion. At LOS A, traffic is free-flowing at or above the speed limit. At LOS F, traffic is very slow, and each vehicle moves only when traffic around it moves. Traffic frequently slows and stops. The concept LOS is F for Segment 13.

The Sacramento Area Council of Governments (SACOG) is an association of local governments in the six-county Sacramento region that provides transportation planning and funding for the region. SACOG is the metropolitan planning organization responsible for developing the state-required and federally required metropolitan transportation plan every 4 years. The *Metropolitan Transportation Plan/Sustainable Communities Strategy 2035* was also adopted by the El Dorado County Transportation Commission to serve as the county's regional transportation plan.

Government Code Section 53091 states that building and zoning ordinances do not apply to "construction of facilities for the production, generation, storage, treatment, or transmission of water, wastewater, or electrical energy by a local agency." Public utility projects that serve the facilities described above would not be subject to local plans, policies, regulations, or ordinances. Local goals and policies related to transportation/traffic resources were used to assist with CEQA review significance thresholds for evaluating potential impacts associated with the project.

The Transportation and Circulation Element of the *El Dorado County General Plan* requires that county-maintained roads and state highways within the unincorporated areas of the county shall not be worse than LOS E in the community regions, or LOS D in rural centers and rural regions (El Dorado County 2009). In addition, the county should strive to provide safe, continuous, and accessible sidewalks and pedestrian facilities as a viable alternative transportation mode.

Operations following project completion would not change compared to existing conditions. Therefore, an analysis of project-related traffic impacts using LOS was not performed, because LOS is primarily used for analyzing long-term effects of projects on traffic flow. This analysis used the recommended screening criterion from the Institute of Transportation Engineers (ITE 1988) for assessing the effects of construction projects that create temporary traffic increases. To account for the large percentage of heavy trucks associated with typical construction projects, the Institute of Transportation Engineers recommends a threshold level of 50 or more new peak-direction (one-way) trips during the peak hour.

3.17.2 DISCUSSION

a) Conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Construction of the proposed project would require hauling of equipment/materials and worker commute trips to and from the project area along local surface streets. During equipment installation, one to two flatbed semi-trucks would transport the solar panel modules to the project site over approximately 100 trips. An estimated 500 trips would be necessary to bring in the crushed gravel, and 25 trips would be necessary for additional construction materials. During the remainder of the project, a limited number of light-duty trucks would be used by construction personnel. An estimated 12 workers would be required for the duration of the project. Implementing the project would not introduce any new land uses or activities in the project area that would generate long-term increases in traffic volume. Potential traffic increases would be limited to temporary construction-related activities associated with installing the project facilities.

Trucks trips associated with import or removal of the required materials during construction of the proposed project would result in up to approximately 25 truck trips per day during transportation of the crushed gravel to the site (i.e., 50 trips per day, assuming a passenger car equivalent value of 2.0). Additionally, commuting by construction workers would result in approximately 12 additional total daily trips in each direction (i.e., 24 trips

per day) on the area roadways. In total, activities associated with the proposed project may add as many as 74 total daily trips to project area roadways over the course of the 8-hour work window. This would result in a maximum of 18 additional trips on area roadways during the peak hour (3 truck trips per hour [6 trips per hour, assuming a passenger car equivalent value of 2.0], and 12 worker trips per peak hour).

Because the proposed project would not result in more than 50 new trips during the a.m. or p.m. peak hours, the proposed project is not anticipated to cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system. Therefore, the proposed project would not result in substantial trip-generated traffic congestion. Also, construction-generated traffic would be temporary, and therefore would not result in any long-term degradation in performance of any of the roadways in the vicinity of the proposed project. Therefore, the proposed project would not conflict with adopted applicable policies or plans related to the performance of the circulation system. This impact would be less than significant, and no mitigation would be required.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

The impact under the threshold above would be significant if the project would generate work vehicle miles traveled per employee exceeding 15 percent below the existing average work vehicle miles traveled per employee in the Area Planning Commission in which the project is located. The project would not require a change to the existing land use designation. Operations following project completion would not change compared to existing conditions. Implementation of the project would not require or result in additional activities for operations and maintenance beyond existing conditions. Therefore, no impact would occur as a result of project operations.

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

The maneuvering of project construction vehicles and equipment among the general-purpose vehicles on local roads could cause safety hazards. Haul trucks and other on-road vehicles used during the construction of the project could increase the hazard risk on existing roadways as could off-road earth-moving equipment transporting soil from the borrow area to the Latrobe Road.

Traffic safety hazard risk could increase because of conflicts where construction vehicles enter a public right-of-way from the project work site; conflicts where road width is narrowed or a roadway is closed during construction activities, which could result in delays to emergency vehicles passing through the project area; or increased truck traffic (and the slower speed and wider turning radius of the trucks) during construction.

In addition to these impacts, the use of large trucks to transport equipment and material to and from the work site could affect road conditions on the access routes by increasing the rate of road wear. The degree to which this impact would occur would depend on the design (pavement type and thickness) and the existing condition of the road. Major arterials and collectors are designed to accommodate a mix of vehicle types, including heavy trucks. The potential impacts are expected to be negligible on those roads. However, lower-capacity roadways could be substantially affected if used by construction equipment.

Because of the temporary disruption to traffic flow, roadway wear and tear, the removal or reduction of lanes, the presence of construction equipment in the public right-of-way, and the localized increase in traffic congestion,

drivers would be presented with unexpected driving conditions and obstacles, which could result in an increased occurrence of automobile or haul-truck accidents.

The increased traffic hazard risk created by construction of the project would be a potentially significant impact.

Mitigation Measure TRANS-1: Prepare and Implement a Traffic Control Plan.

Before construction begins, EID and/or its approved construction contractor shall prepare and implement a traffic control plan to minimize construction-related traffic safety hazards on the affected roadways, and ensure adequate access for emergency responders. EID and/or its approved construction contractor shall coordinate development and implementation of this plan with jurisdictional agencies (e.g., El Dorado County), as appropriate. The traffic control plan shall, at minimum:

- Include a discussion of work hours, haul routes, work area delineation, traffic control, and flagging.
- Determine the need to require workers to park personal vehicles at an approved staging area and take only necessary project vehicles to the work sites.
- Develop and implement a plan for notifications and a process for communication with affected residents and landowners before the start of construction. Public notification would include posting of notices and appropriate signage of construction activities. The written notification would include the construction schedule, the exact location and duration of activities on each street (e.g., which roads/lanes and access points/driveways would be blocked on which days and for how long), and contact information for questions and complaints.
- Provide notification to the public advising them of alternative routes that may be available to avoid delays.
- Ensure that appropriate warning signs are posted in advance of construction activities, alerting bicyclists and pedestrians to any closures of non-motorized facilities.
- Provide notification to administrators of police and fire stations, ambulance service providers, and recreational facility managers of the timing, location, and duration of construction activities, and the locations of detours and lane closures, where applicable. Maintain access for emergency vehicles in and/or adjacent to roadways affected by construction activities at all times.
- Require the repair and restoration of affected roadway rights-of-way to their original condition after construction is completed.

Implementing TRANS-1 would reduce the potentially significant impact associated with traffic hazards to a less than significant level, because the traffic control plan would be used to develop detours to ensure acceptable traffic flow through and/or around the construction zone; minimize impacts on multimodal facilities by providing alternate routes for users of the facilities; and minimize traffic congestion.

d) Result in inadequate emergency access?

Emergency access to roadways in the project area could be reduced by activities associated with the proposed project. Slow-moving trucks entering and exiting the project site along Latrobe Road could delay the movement of emergency vehicles between Golden Foothill Parkway and Suncast Lane. However, flaggers would be

deployed in this area and would be present to control truck traffic in the event of an emergency to allow unimpeded movement of emergency vehicles. Nonetheless, the proposed project could result in inadequate emergency access during construction. Therefore, the impact is potentially significant.

Implementation of Mitigation Measure TRANS-1: Prepare and Implement a Traffic Control Plan would reduce the impacts associated with emergency access to a less than significant level.

3.18 TRIBAL CULTURAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. Tribal Cultural Resources. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☒
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

3.18.1 ENVIRONMENTAL SETTING

NATIVE AMERICAN CONSULTATION

A sacred lands search was requested by AECOM from the Native American Heritage Commission (NAHC). The purpose of the search was to ascertain whether additional resources or locations exist that may be of importance to Native Americans who traditionally have resided in the project area. On March 11, 2019, the NAHC responded, stating that a review of their files yielded negative results. The NAHC also provided the contact information for local Native American tribes and individuals that may have information regarding tribal cultural resources that may be located within or in the vicinity of the project site and that could be significantly altered by project implementation.

On February 1, 2019 EID contacted the United Auburn Indian Community of the Auburn Rancheria, the Wilton Rancheria, the El Dorado County Wopumnes Nisenan-Mewuk Nation and the Torres Martinez Desert Cahuilla Indians, requesting a response if the groups are interested in consulting regarding the proposed project, in accordance with AB 52. Other tribal groups on the NAHC list will be notified of the availability of this IS/MND and may request consultation with EID if interested.

3.18.2 DISCUSSION

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

Consultation with local Native American groups and individuals did not identify tribal cultural resources in the project site and the NAHC Sacred Lands database search was negative. No impact would occur.

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Consultation with local Native American groups and individuals did not identify tribal cultural resources in the project site and the NAHC Sacred Lands database search was negative. No impact would occur.

3.19 UTILITIES AND SERVICE SYSTEMS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX. Utilities and Service Systems. Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e) Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

3.19.1 ENVIRONMENTAL SETTING

The utility serving the EDH WWTP is PG&E. The solar arrays would be connected to the grid through a combination of underground and overhead electrical conduit. PG&E would be performing minor upgrades to their existing 21-kV distribution system to facilitate the interconnection. The project would not be served by any wastewater or waste disposal facilities.

3.19.2 DISCUSSION

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

The proposed solar PV arrays would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. The project would not involve any stormwater treatment, because runoff from the site and surrounding areas would enter the adjacent ephemeral drainage south of the project site, and eventually reach Carson Creek. No impact would occur.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Only one small waterline, if any, would be needed for the proposed solar PV arrays if it is determined that the modules need occasional rinsing to maintain the energy conversion efficiency. The waterline would be serviced by the existing water system of the EDH WWTP, which maintains sufficient capacity to support this connection. Impacts would be less than significant.

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

The proposed solar PV arrays would not rely on or have an effect on wastewater treatment because there would be no connection to this service. No impact would occur.

d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

The proposed solar PV arrays would not be served by a landfill. Any spoils generated during soil disturbance or grading activities would be used onsite for periphery landscaping or other uses as necessary during the project. No impact would occur.

e) Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?

Excavated soils and rock would be used on site as specified above. No impact would occur.

3.20 WILDFIRE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XX. Wildfire. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

3.20.1 ENVIRONMENTAL SETTING

Cal Fire designates the project site as a Moderate fire hazard severity zone (Cal Fire 2007).

3.20.2 DISCUSSION

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

Construction and operation of the proposed solar PV arrays would not interfere with any adopted emergency response plan or emergency evacuation plan, including any EID emergency response plan or the Countywide Disaster Plan as implemented by the OES of the County Sheriff's Department. However, slow-moving trucks along Latrobe Road could delay the movement of emergency vehicles between Golden Foothill Parkway and Suncast Lane as well as closures of roadways during construction could delay the movement of emergency vehicles or interfere with evacuation of the proposed project area. Therefore, the impact is potentially significant.

Mitigation Measure WILDFIRE-1: Implement Mitigation Measure TRANS-1.

Implementation of Mitigation Measure TRANS-1 would reduce the impact to a less than significant level by requiring a plan for notifications and a process for communication with affected residents and landowners, before the start of construction; requiring notification to the public, advising them of alternative routes; providing notification to administrators of police and fire stations, and ambulance service providers of the timing, location, and duration of construction activities and the locations of detours and lane closures, where applicable; and

maintaining access for emergency vehicles in and/or adjacent to roadways affected by construction activities at all times.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

The proposed solar PV arrays would be located on gently sloping terrain. Project construction would involve some soil disturbance and grading for the conduit and foundations. During construction, equipment and on-site diesel fuel could pose a risk to wildfire with possible ignition sources such as internal combustion engines, gasoline-powered tools, and equipment that could produce a spark, fire, or flame. However, contractors would have to comply with PRC Sections 4427, 4428, 4431, and 4442. During construction, strict adherence to applicable PRC requirements would ensure that contractors are responsible for monitoring and safety measures ensuring that any risk to exacerbate wildfire, and in turn, pollution due to wildfire, are minimized. The resulting potential impact is considered less than significant. During operation, the areas around the solar arrays would be covered by crushed gravel, which would further reduce the risk of wildland fire on adjacent grasslands should there be an electrical problem with the solar arrays. The project occurs at an established EID facility that is already served by fire protection through the El Dorado Hills Fire Department. Impacts would be less than significant.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

The proposed solar PV arrays include the installation and operation of electrical equipment (inverters, transformers, switchgear, system disconnects, and service meters), which could potentially exacerbate fire risks. However, as described in the Project Description, the lands around the arrays would be covered by crushed gravel. The project is already served by fire protection through the El Dorado Hills Fire Department. Impacts would be less than significant.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

The proposed project does not include any habitable structures. Implementation of the proposed project would not expose people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes. Impacts would be less than significant.

3.21 MANDATORY FINDINGS OF SIGNIFICANCE

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XXI.	**Mandatory Findings of Significance.**				
	a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
	b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
	c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Authority: Public Resources Code Sections 21083, 21083.5.

Reference: Government Code Sections 65088.4.
Public Resources Code Sections 21080, 21083.5, 21095; *Eureka Citizens for Responsible Govt. v. City of Eureka* (2007) 147 Cal.App.4th 357; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th at 1109; *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656.

3.21.1 DISCUSSION

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?

The proposed project would not substantially reduce the habitat of fish or wildlife species, or cause a fish or wildlife population to drop below self-sustaining levels. Implementation of the mitigation measures presented in Sections 3.4, 3.5, 3.7, 3.10, and 3.17 would mitigate potential significant impacts that would substantially degrade the quality of the environment, or impact biological or cultural resources. The potential impacts identified in this document would be less than significant with mitigation incorporated.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a

project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

The project would not have impacts that are considered cumulatively considerable. EID is proposing to relocate the equipment and materials storage on the EDH WWTP site. However, the relocation would not overlap with the construction of the proposed project. The grading for the relocation would not start until May 2020. There are no other known future projects at the plant. The potentially significant impacts that would occur during construction would be mitigated to less than significant with implementation of mitigation measures described throughout this IS/MND. There are no potentially significant impacts that would occur during operation of the project.

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

As discussed previously in Section 3.3, "Air Quality," the project is not located in an area designated as "likely to contain asbestos"; therefore, the project would not expose nearby receptors to substantial asbestos concentrations. As specified in Section 3.9, "Hazards and Hazardous Materials," Mitigation Measure HAZ-1 would reduce potential impacts associated with creation of a hazard to the public or the environment through accidental spills to a less than significant level.

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APPENDIX A

Light and Glare Analysis

INTRODUCTION

The purpose of this analysis is to determine potential incidences of glint and glare associated with the installation of the solar photovoltaic (PV) system proposed for El Dorado Hills Wastewater Treatment Plant (EDH WWTP) Solar Photovoltaic (PV) Array Project that may pose a nuisance or hazard to nearby observers. Possible glare is evaluated against the current Federal Aviation Administration (FAA) guidelines and industry standards for acceptable glare.

The reflection of sunlight is the primary source of potential glare from glass or metallic surfaces associated with the proposed project. Every driver is familiar with the type of glare from the view of heading directly into the rising or setting sun. Pilots often fly in the direction of the sun and thus experience very intense glare from the sun itself. Pilots also experience distracting glare from a variety of objects on the ground such as metal structures, bodies of water, and bright lights. Consequently, pilots fly with sunglasses and tinted visors to minimize this hazard. The reflected glare produced by these objects is not nearly as intense as direct sunlight.

For purposes of this analysis, glint refers to a momentary flash of light produced as a direct reflection of the sun and can occur from any reflective surface. Glint may often affect a moving observer such as a pilot or vehicle driver on roadways. Glare is a continuous source of excessive brightness and can be experienced by a stationary observer located in the path of reflected sunlight. Glint and glare can cause a distraction or lead to an after-image being experienced by an observer. This can present a nuisance and, under some circumstances, a safety hazard.

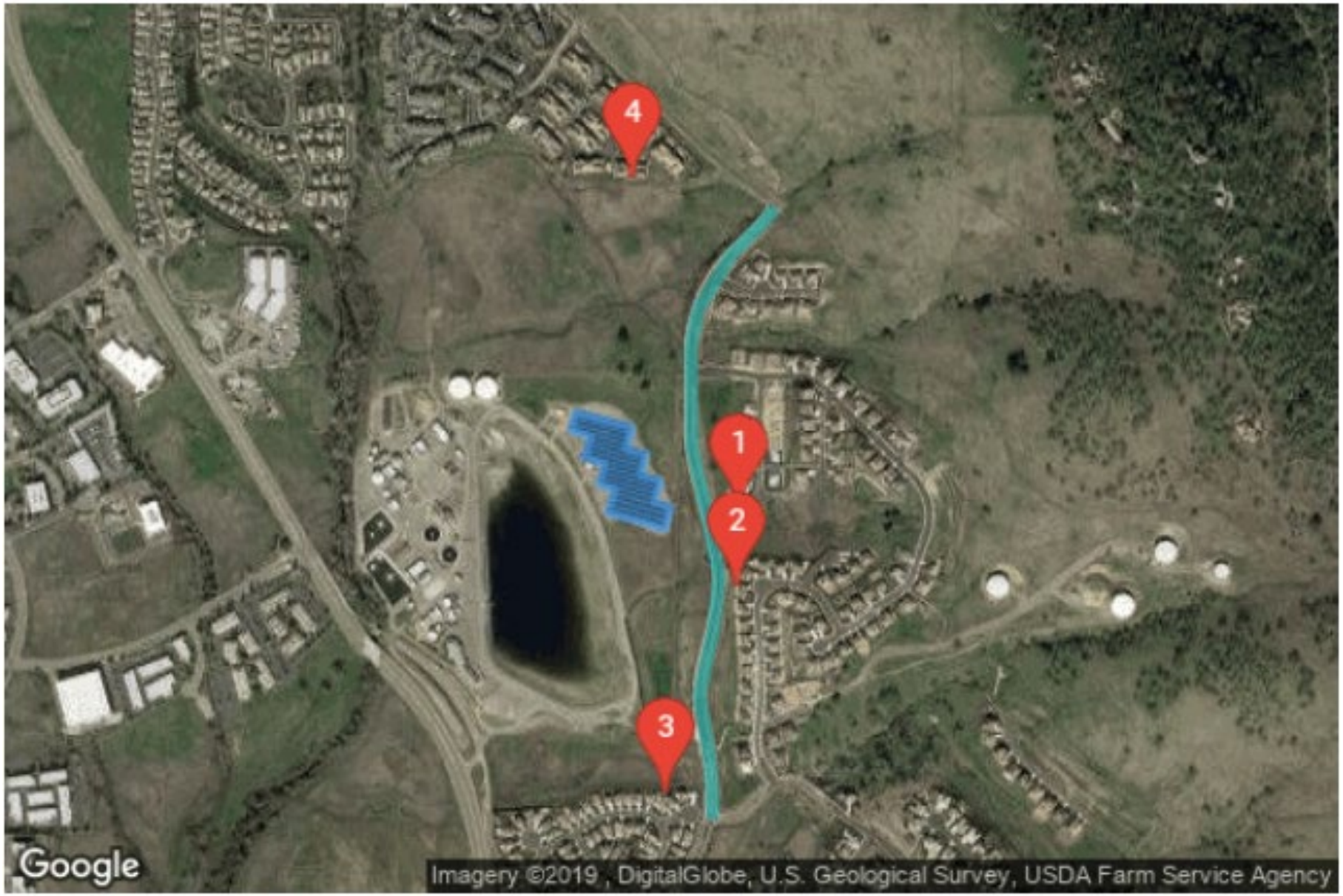
Solar PV panels are designed to absorb, and not reflect, close to 100% of the solar radiation that strikes them. However, when sunlight strikes the glass front of a solar panel at a glancing angle a significant portion of the solar radiation is reflected, which can potentially lead to glare affecting an observer.

The FAA and Sandia National Laboratories collaborated to create an online software tool, known as the Solar Glare Hazard Analysis Tool (SGHAT) to analyze solar PV arrays for their potential to create hazardous solar glare. In 2017, the SGHAT was licensed to the private company ForgeSolar. ForgeSolar improved upon the original SGHAT technology and offers a private solar glare hazard analysis tool. The analysis presented in this report used the current professional ForgeSolar software. ForgeSolar maintains a webpage at: https://www.forgesolar.com/

ANALYZING THE EDH WWTP SOLAR PV ARRAY PROJECT

The ForgeSolar SGHAT model used to support this report employed the default model variable values that are not site-specific. This conservative approach means the results produced by the SGHAT presents a reasonable worst-case scenario. The model variables are presented in the ForgeSolar results report presented in Attachment A.

The EDH WWTP site existing solar array, as modeled in the SGHAT is shown in Figure A-1.



Source: ForgeSolar GlareGauge Glare Analysis Results 2019.

Figure A-1. El Dorado Hills WWTP Existing Solar Arrays and Location of Nearby Observation Points (OP)

The existing solar PV array consists of single-axis trackers that tilt the solar panels toward the east early in the morning and then slowly rotate the long north-south rows of solar panels to follow the sun's path across the sky. The panels are slightly diagonal (facing upwards with a 25º angle) when the sun reaches its highest point around the middle of the day and rotate as far as 60 degrees from horizontal at the start and end of the day. This tracking feature not only boosts electricity production compared to a fixed-tilt system but it also dramatically reduces the potential for solar glare impacts. Because the tracker keeps the panels facing in the general direction of the sun there is a very little reflection from the panels and any reflection is directed upward, away for potential viewers of the reflected sunlight.

The SGHAT model was modified to consider the anti-reflective coating (ARC) that will be employed on the new panels. For each of the new arrays addressed in this report, the solar array is modeled at a height of 5 feet, representing an average height for the surface of PV modules.

It is important to note that while the software does take into account the topography of the site and the actual land elevation of each observation point (OP) analyzed, the software does not take into account visual obstructions between the solar array and the observer. This includes both topographical barriers, such as a hill, and living or man-made barriers such as a forest or building. Detailed analysis of the visibility of the solar array from each observation point is not included in this report, although a quick examination of the aerial 3-D surface models reveals that many of the observation points analyzed have a view of the solar array, and glare it may produce is at least partially blocked by existing vegetation.

ANALYSIS OF GLARE AT NEARBY RESIDENCES

There are numerous residences located near the existing and proposed solar arrays. The closest nearby dwellings were selected for the SGHAT analysis to depict a worst-case analysis of potential glare. The locations of the existing EDH WWTP, solar PV arrays, and observation points used in this analysis are shown in Figure A-1. Each observation point is modeled at 20 feet above grade to represent a viewer located on a building second floor and at heights not shielded by solid fences and soundwalls.

ANALYSIS OF POTENTIAL GLINT ON NEARBY MOTORISTS

The only roadway near the proposed solar PV array project is Blackstone Parkway located to the east of the EDH WWTP site. The elevation of the Blackstone Parkway near the project site ranges between 570 feet to 705 feet or about 15- to 45-feet higher than the existing and proposed solar PV arrays. Topography and vegetation along the west side of the roadway partially limits motorists' views of the site. Figure A-2 is an elevated view in a 3-D model of the site in Google Earth depicts the views of the solar PV array site from Blackstone Parkway.

The software checks for glint from 360 degrees around each observation point, regardless of the direction of travel. Studies of aircraft pilots have shown that intense glare coming from beyond 45 degrees from their direction of travel does not present hazard, and it is reasonable to assume that the same holds true for motor vehicle drivers as well.

Source: Google Earth, 2019. Modified by AECOM 2019.

Figure A-2 Potential Visual Obstructions Located Between Existing Solar Array and Adjacent Roadway and Residences

ANALYSIS OF GLARE AT NEARBY AIRPORTS

While FAA generally does not have jurisdiction to limit development outside of airport property and airspace, they have provided guidance that they recommend solar projects within 5 nautical miles of an airport, conduct an SGHAT analysis[1].

The closest airport to the Palm Drive Solar site is the Cameron Airpark, located about 4.83 miles (4.2 nautical miles) northeast of the proposed solar site. Because this distance is less than 5 nautical miles, the airport was included in the SGHAT analysis.

SGHAT MODEL RESULTS

A glare analysis was performed for the previously described observation points described. A summary of results is presented in this section of the report and the full ForgeSolar-generated report is provided as Attachment A to this appendix.

The SGHAT model defines two intensities of glare: "green" and "yellow". "Green" intensity glare represents a "Low Potential for Temporary After-Image" and is about 1/1,000th the intensity of looking directly into the sun (based on Hazards Plot in the SGHAT User's Manual[2]). According to the FAA Interim solar policy[3], which defines the requirements for solar projects constructed on airport property, glare classified in this green range that

[1] FAA proposed this 5 nautical mile threshold in the stakeholder development process for the Template Solar Development Ordinance for North Carolina in 2013. The 5 nautical mile threshold was included in the consensus template ordinance and has been adopted by jurisdictions across North Carolina (http://go.ncsu.edu/template-solar-ordinance)

[2] https://share.sandia.gov/phlux/static/references/glint-glare/SGHAT_Users_Manual_v2-0_final.pdf.

[3] "Interim Policy for the FAA Review of Solar Energy System Projects on Federally Obligated Airports.", http://www.gpo.gov/fdsys/pkg/FR-2013-10-23/pdf/2013-24729.pdf.

is visible to pilots on their final approach is acceptable. In other words, any amount of green glare is considered non-hazardous and is not discussed further in this analysis.

"Yellow" intensity glare has a "Potential for Temporary After- Image" where such glare could affect a pilot's ability to see clearly even after looking away from the glare. The FAA Interim Solar Policy does not allow solar arrays that produce yellow glare visible to pilots on final approach to be built on airport property.

The SGHAT model reports results in terms of minutes of glare that would occur over the period of a year. So, while glare may occur, it may only occur a few minutes per day at a fixed point of observation, depending on duration of glare each day and number of days that glare occurs.

The SGHAT model found the proposed solar PV arrays would increase glare at the residences located east of the EDH WWTP as represented by OP 1 and OP 2, and also for the moving receptors along the Blackstone Parkway (Table A-1). As shown in Table A-1, the proposed solar PV arrays would contribute 499 minutes of glare annually to local receptors.

Table A-1. Results of SGHAT Glare Analysis Model

Glare Source	Minutes of Glare at Observation Point					Total Minutes of Glare
	OP 1	OP 2	OP 3	OP 4	Blackstone Parkway	
Existing EDH WWTP Reservoir	851	979	0	0	404	2234
Existing Solar PV Array	308	0	0	0	0	308
Proposed Solar PV Array North 1	0	0	0	0	14	14
Proposed Solar PV Array North 2	0	0	0	0	0	0
Proposed Solar PV Array South 1	3	399	0	0	83	485
Proposed Solar PV Array South 2	0	0	0	0	0	0

OP = Observation Point
PV = photovoltaic
EDH WWTP= Wastewater Treatment Plant

When compared to the existing glare emanating from the EDH WWTP Reservoir and existing solar PV arrays totaling 1,868 minutes of glare, the new solar PV arrays would add about 402 minutes-of-glare to residences located east of the EDH WWTP represented by OP 1 and OP 2.

Table A-2 summarizes the daily increase in minutes of glare that can affect local observers. The minutes-of-glare shown in Table A-2 account for the duration of glare each day and number of days of that glare occurs.

As shown in Table A-2, the minutes-of-glare associated with the proposed solar PV arrays is less than the minutes-of-glare currently generated by the existing EDH WWTP reservoir and solar arrays. The existing EDH WWTP reservoir is clearly the most dominant glare source to residences located at or near OP 1 and OP2.

Most of the glare is caused by the existing solar PV facility and the EDH WWTP reservoir, resulting in 308 minutes-of-glare per year, and 2,234 minutes-of-glare per year, respectively. The proposed solar PV array project would generate only to 14 minutes-of-glare per year from installation of the proposed solar panels shown as North 1 and 485 minutes-of-glare per year from the southern proposed solar panels shown as South 1. This would result in about 30 minutes per day between April and October, at the nearest residence to the north shown as OP 2.

The glare emanating from the proposed solar PV arrays would not contribute additional minutes-of-glare to residences located at or near OP 1 and OP 2 beyond those now emanating from the EDH WWTP reservoir and existing solar PV arrays. As shown in Table A-3, the time of day that residences located at or near OP 1 and OP 2 are exposed to glare originating by the proposed solar PV arrays is the same time that glare emanates from the existing EDH WWTP reservoir. Because residences represented by OP 1 and OP 2 are subjected to glare during the period of late-afternoon to dusk, the proposed solar PV arrays would not contribute to additional number of days, or new glare locations.

As shown in Table A-3, the new South Array 1 would increase additional glare duration (minutes-of-glare per day) at OP 1 in the month of October. At present, OP 1 is exposed to glare from 4:30 to 5:30 PM from the combined EDH WWTP reservoir and the existing solar array sources. The new South Array 1 will increase the duration of glare by 15 minutes, extending the glare exposure to 5:45 PM at OP 1.

Table A-2. Maximum Minutes of Glare at Observation Points

Glare Source	Observation Point	Maximum Minutes-of-Glare Per day											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Existing EDH WWTP Reservoir	OP 1	40	40	40	40	40	0	0	40	40	40	40	60
	OP 2	55	55	55	55	55	55	55	55	55	55	55	55
Existing Solar PV Array	OP 1	0	0	15	30	30	15	30	15	15	30	0	0
	OP 2	0	0	0	0	0	0	0	0	0	0	0	0
Proposed Solar PV Array North 1	OP 1	0	0	0	0	0	0	0	0	0	0	0	0
	OP 2	0	0	0	0	0	0	0	0	0	0	0	0
Proposed Solar PV Array North 2	OP 1	0	0	0	0	0	0	0	0	0	0	0	0
	OP 2	0	0	0	0	0	0	0	0	0	0	0	0
Proposed Solar PV Array South 1	OP 1	0	0	15	0	0	0	0	0	0	15	0	0
	OP 2	0	0	0	30	30	30	30	45	30	30	0	0
Proposed Solar PV Array South 2	OP 1	0	0	0	0	0	0	0	0	0	0	0	0
	OP 2	0	0	0	0	0	0	0	0	0	0	0	0
Percentage Increase of Maximum Minutes-of-Glare	OP 1	0	0	0	0	0	0	0	0	0	0	0	0
	OP 2	0	0	0	0	0	0	0	0	0	0	0	0

EDH WWTP = El Dorado Hills Wastewater Treatment Plant
PV = photovoltaic

Table A-3. Time of Day and Duration of Glare Exposure

Glare Source		Time of Day and Duration of Glare											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
EDH WWTP Reservoir	OP 1	4:00 – 5:00 PM	4:30 – 5:30 PM	5:00 – 6:00 PM	5:30 – 6:30 PM	6:00 – 7:00 PM		6:00 – 7:00 PM	5:30 – 6:30 PM	5:00 – 6:00 PM	4:30 – 5:30 PM	4:00–5:00 PM	4:00–5:00 PM
	OP 2	4:00 – 5:00 PM	4:30 – 5:30 PM	5:00 – 6:00 PM	5:30 – 6:30 PM	6:00 – 7:00 PM	6:30 – 7:30 PM	6:30 – 7:30 PM	6:00 – 7:00 PM	5:00 – 6:00 PM	4:30 – 5:30 PM	4:00–5:00 PM	4:00–5:00 PM
Existing Solar PV Array	OP 1			5:00 – 6:00 PM	5:00 – 6:00 PM	5:00 – 5:30 PM	5:00 – 5:30 PM	5:00 – 5:30 PM	5:30 – 5:45 PM	5:00 – 5:30 PM	5:00 – 5:30 PM		
	OP 2												
Proposed Solar PV Array North 1	OP 1												
	OP 2												
Proposed Solar PV Array North 2	OP 1												
	OP 2												
Proposed Solar PV Array South 1	OP 1			5:45 – 6:00 PM							5:30 – 5:45 PM		
	OP 2			5:30 – 6:00 PM	5:00 – 6:00 PM	5:00 – 5:30 PM	5:00 – 5:30 PM	5:00 – 6:00 PM	5:00 – 6:00 PM	5:30 – 6:00 PM			
Proposed Solar PV Array South 2	OP 1												
	OP 2												

EDH WWTP = El Dorado Hills Wastewater Treatment Plant
OP = Observation Point
PV = photovoltaic
Gray shading signifies no glare is occurring at the Observation Point

CONCLUSION

The ForgeSolar Solar Glare Hazard Analysis Tool, is a detailed and proven solar glare hazard analysis software. The model was used to estimate the potential for the proposed solar array to cause glare to motorists and residents at nearby dwellings. The analysis found that glare does occur at the analyzed locations and at various intensity and at specific times the year. Most of the glare is caused by 1) the existing EDH WWTP reservoir and by 2) the existing solar PV arrays that generate 2,234 minutes and 308 minutes-of-glare per year, respectively.

The installation of the proposed EDH WWTP solar PV arrays would result in glare emanating from the solar panels. The proposed project would create 14 minutes-of-glare per year from the new solar panels shown as New North 1 and 485 minutes per year from the new solar panels shown as New South 1. This would result in about 30 minutes-of-glare per day between March and October, at the residences shown as OP 2.

However, this new glare is not considered to be a significant adverse impact because the affected residences, located at or near OP 1 and OP 2, are already exposed to glare from the existing EDH WWTP reservoir. The glare from the proposed EDH WWTP solar PV arrays would not increase the number of days of glare, or new glare locations. The new South Array 1 would increase additional glare duration (minutes-of-glare per day) at OP 1 by 15 minutes in the month of October, extending the OP 1 glare exposure to 5:45 PM.

GLOSSARY

After-image	Visual image that persists after the stimulus that caused it has stopped.
Azimuth	Horizontal angle of the Sun around an object. North is 0°, east is 90°, south is 180°, and west is 270°.
FP	Flight path
glare	Glare is a continuous source of excessive brightness. It could be experienced by a stationary observer located in the path of reflected sunlight from the face of the panel
glint	Glint is a momentary flash of light. Glint could be experienced by an observer passing a solar panel at speed, such as a motorist
kWDC	Kilowatts Direct Current
mrad	Measure of angle, 1/1000th of a radian
MWAC	Megawatts Alternating Current
MWDC	Megawatts Direct Current
OP	Observation point
Subtended Angle	Size of an object divided by the distance from the observer.
WDC	Watts Direct Current

REFERENCES

ForgeSolar GlareGauge Glare Analysis Results. 2019. (Attachment A.) Http: https://www.forgesolar.com/projects/4566/configs/26063/. Accessed March 12, 2019.

Google Earth, 2019. Modified by AECOM 2019.

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ATTACHMENT 1

ForgeSolar GlareGauge Glare Analysis Results

GLAREGAUGE GLARE ANALYSIS RESULTS

Site Configuration: WithProjectWithAirportandCoating

Project site configuration detailsand results.

Created **March 12, 2019 3:50 p.m.**
Updated **March 12, 2019 3:53 p.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **15** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-8**
Site Configuration ID: 26063.4566

Summary of Results Glare with potential for temporary after-image predicted

PV name	Tilt deg	Orientation deg	"Green" Glare min	"Yellow" Glare min	Energy Produced kWh
Lake	0.0	180.0	0	2,234	-
PV array 1 Existing	25.0	180.0	0	346	2,347,000.0
PV array 2 New North 1	25.0	180.0	20	0	4,424,000.0
PV array 3 New North 2	25.0	180.0	0	0	4,431,000.0
PV array 4 New South 1	25.0	180.0	79	473	4,422,000.0
PV array 5 New South 2	25.0	180.0	0	0	4,424,000.0

COMPONENT DATA

PV ARRAY(S)

Name: Lake
Axis tracking: Fixed (no rotation)
Tilt: 0.0 deg
Orientation: 180.0 deg
Rated power: -
Panel material: Smooth glass without AR coating **Vary reflectivity with sun position?** Yes **Correlate slope error with surface type?** Yes **Slope error**: 6.55 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	38.638836	-121.058788	561.03	0.00	561.03
2	38.638946	-121.058643	560.23	0.00	560.23
3	38.639008	-121.058435	560.93	0.00	560.93
4	38.638954	-121.058183	559.43	0.00	559.43
5	38.638663	-121.057724	559.83	0.00	559.83
6	38.638518	-121.057483	563.63	0.00	563.63
7	38.638233	-121.057219	561.73	0.00	561.73
8	38.638047	-121.057074	562.93	0.00	562.93
9	38.637711	-121.056893	561.93	0.00	561.93
10	38.637342	-121.056682	563.13	0.00	563.13
11	38.637064	-121.056558	564.13	0.00	564.13
12	38.636396	-121.056376	562.33	0.00	562.33
13	38.635971	-121.056269	560.73	0.00	560.73
14	38.635644	-121.056205	558.23	0.00	558.23
15	38.635442	-121.056158	558.23	0.00	558.23
16	38.635225	-121.056018	561.73	0.00	561.73
17	38.635093	-121.056000	560.83	0.00	560.83
18	38.635041	-121.055986	560.23	0.00	560.23
19	38.634983	-121.056007	559.23	0.00	559.23
20	38.634931	-121.056057	558.63	0.00	558.63
21	38.634868	-121.056174	558.43	0.00	558.43
22	38.634782	-121.056553	560.63	0.00	560.63
23	38.634719	-121.056898	559.73	0.00	559.73
24	38.634729	-121.057100	560.33	0.00	560.33
25	38.634905	-121.057559	560.93	0.00	560.93
26	38.635089	-121.058042	562.83	0.00	562.83
27	38.635197	-121.058288	562.53	0.00	562.53
28	38.635325	-121.058501	562.03	0.00	562.03
29	38.635453	-121.058618	561.63	0.00	561.63
30	38.635549	-121.058701	561.73	0.00	561.73
31	38.635918	-121.058734	561.93	0.00	561.93
32	38.636164	-121.058731	560.93	0.00	560.93
33	38.636382	-121.058737	561.53	0.00	561.53
34	38.637069	-121.058784	562.13	0.00	562.13
35	38.637130	-121.058796	561.83	0.00	561.83
36	38.637228	-121.058801	562.13	0.00	562.13
37	38.637789	-121.058803	558.53	0.00	558.53
38	38.638224	-121.058843	559.23	0.00	559.23
39	38.638400	-121.058856	560.63	0.00	560.63
40	38.638632	-121.058866	561.03	0.00	561.03
41	38.638766	-121.058837	561.23	0.00	561.23

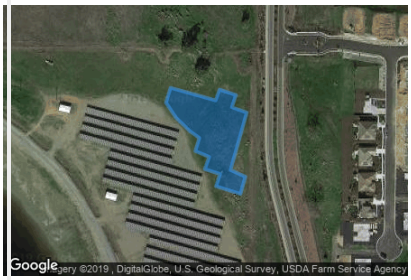
Name: PV array 1 Existing
Axis tracking: Fixed (no rotation)
Tilt: 25.0 deg
Orientation: 180.0 deg
Rated power: 1000.0 kW
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	38.637356	-121.055303	590.03	5.00	595.03
2	38.637691	-121.055196	596.43	5.00	601.43
3	38.637766	-121.055501	591.93	5.00	596.93
4	38.638089	-121.055394	603.73	5.00	608.73
5	38.638177	-121.055780	594.83	5.00	599.83
6	38.638495	-121.055668	604.63	5.00	609.63
7	38.638572	-121.056051	594.43	5.00	599.43
8	38.638895	-121.055939	602.63	5.00	607.63
9	38.639133	-121.057036	588.53	5.00	593.53
10	38.638848	-121.057137	576.63	5.00	581.63
11	38.638745	-121.056749	580.93	5.00	585.93
12	38.638431	-121.056873	573.73	5.00	578.73
13	38.638339	-121.056476	581.23	5.00	586.23
14	38.638032	-121.056588	573.83	5.00	578.83
15	38.637959	-121.056279	581.23	5.00	586.23
16	38.637605	-121.056413	571.93	5.00	576.93

Name: PV array 2 New North 1
Axis tracking: Fixed (no rotation)
Tilt: 25.0 deg
Orientation: 180.0 deg
Rated power: 1886.0 kW
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad

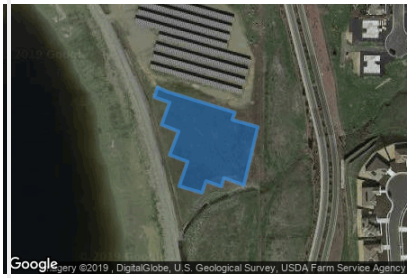
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	38.639357	-121.056282	609.03	5.00	614.03
2	38.639252	-121.056320	602.83	5.00	607.83
3	38.639365	-121.056749	598.73	5.00	603.73
4	38.639252	-121.056797	594.23	5.00	599.23
5	38.639516	-121.057918	596.23	5.00	601.23
6	38.639570	-121.057897	594.43	5.00	599.43
7	38.639495	-121.057655	593.03	5.00	598.03
8	38.639541	-121.057628	589.53	5.00	594.53
9	38.639466	-121.057360	588.33	5.00	593.33
10	38.639533	-121.057328	589.33	5.00	594.33
11	38.639462	-121.057054	595.93	5.00	600.93
12	38.639550	-121.057012	597.83	5.00	602.83
13	38.639453	-121.056658	603.43	5.00	608.43
14	38.639411	-121.056470	606.03	5.00	611.03

Name: PV array 3 New North 2
Axis tracking: Fixed (no rotation)
Tilt: 25.0 deg
Orientation: 180.0 deg
Rated power: 1886.0 kW
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	38.639177	-121.056110	604.13	5.00	609.13
2	38.639315	-121.056057	611.23	5.00	616.23
3	38.639198	-121.055520	622.83	5.00	627.83
4	38.639298	-121.055472	627.73	5.00	632.73
5	38.639248	-121.055279	631.33	5.00	636.33
6	38.639135	-121.055327	627.73	5.00	632.73
7	38.639084	-121.055150	631.23	5.00	636.23
8	38.638552	-121.055343	616.63	5.00	621.63
9	38.638489	-121.055166	620.43	5.00	625.43
10	38.638330	-121.055225	615.03	5.00	620.03
11	38.638401	-121.055515	606.63	5.00	611.63
12	38.638515	-121.055467	611.73	5.00	616.73
13	38.638561	-121.055649	606.33	5.00	611.33
14	38.638674	-121.055595	610.13	5.00	615.13
15	38.638728	-121.055762	604.03	5.00	609.03
16	38.638850	-121.055713	609.63	5.00	614.63
17	38.638913	-121.055826	606.13	5.00	611.13
18	38.639038	-121.055992	601.23	5.00	606.23

Name: PV array 4 New South 1
Axis tracking: Fixed (no rotation)
Tilt: 25.0 deg
Orientation: 180.0 deg
Rated power: 1886.0 kW
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	38.637396	-121.056202	573.53	5.00	578.53
2	38.637203	-121.055397	587.53	5.00	592.53
3	38.637136	-121.055429	586.23	5.00	591.23
4	38.637069	-121.055123	588.83	5.00	593.83
5	38.636528	-121.055290	576.93	5.00	581.93
6	38.636595	-121.055526	578.33	5.00	583.33
7	38.636516	-121.055558	576.13	5.00	581.13
8	38.636566	-121.055740	574.73	5.00	579.73
9	38.636457	-121.055788	572.23	5.00	577.23
10	38.636520	-121.056062	571.33	5.00	576.33
11	38.636746	-121.055960	572.73	5.00	577.73
12	38.636809	-121.056175	571.83	5.00	576.83
13	38.637027	-121.056067	576.33	5.00	581.33
14	38.637090	-121.056271	572.73	5.00	577.73
15	38.637295	-121.056175	572.93	5.00	577.93
16	38.637346	-121.056357	571.53	5.00	576.53
17	38.637438	-121.056320	572.13	5.00	577.13

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	38.636206	-121.055536	577.73	5.00	582.73
2	38.636143	-121.055354	581.83	5.00	586.83
3	38.636093	-121.055386	582.13	5.00	587.13
4	38.636026	-121.055166	586.53	5.00	591.53
5	38.635690	-121.055354	581.53	5.00	586.53
6	38.635615	-121.055172	584.23	5.00	589.23
7	38.635120	-121.055402	575.03	5.00	580.03
8	38.635217	-121.055735	568.73	5.00	573.73
9	38.635393	-121.055644	572.93	5.00	577.93
10	38.635472	-121.055837	569.13	5.00	574.13
11	38.635757	-121.055665	574.13	5.00	579.13
12	38.635845	-121.055917	569.73	5.00	574.73
13	38.636206	-121.055708	572.63	5.00	577.63
14	38.636147	-121.055574	578.43	5.00	583.43

Name: PV array 5 New South 2
Axis tracking: Fixed (no rotation)
Tilt: 25.0 deg
Orientation: 180.0 deg
Rated power: 1886.0 kW
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad

MILE FLIGHT PATH RECEPTOR(S)

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
Threshold	38.679500	-120.983358	1265.42	50.00	1315.42
2-mile point	38.657161	-120.959817	1377.02	491.86	1868.87

Name: FP 1
Description:
Threshold height : 50 ft
Direction: 320.6 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Route Receptor(s)

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	38.642143	-121.053241	705.63	5.00	710.63
2	38.641464	-121.054056	674.93	5.00	679.93
3	38.640668	-121.054667	647.63	5.00	652.63
4	38.640124	-121.054807	638.23	5.00	643.23
5	38.639302	-121.054796	635.03	5.00	640.03
6	38.638598	-121.054786	626.13	5.00	631.13
7	38.637592	-121.054498	611.53	5.00	616.53
8	38.636645	-121.054262	603.03	5.00	608.03
9	38.635899	-121.054359	601.23	5.00	606.23
10	38.634868	-121.054638	589.73	5.00	594.73
11	38.633829	-121.054428	576.63	5.00	581.63
12	38.633062	-121.054380	570.03	5.00	575.03

Name: Blackstone Parkway
Route type: Two-way
View angle: 50.0 deg

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 1	38.637645	-121.053856	637.03	20.00	657.03
OP 2	38.636496	-121.053914	611.13	20.00	631.13
OP 3	38.633354	-121.055302	565.83	20.00	585.83
OP 4	38.642646	-121.055924	629.73	20.00	649.73

PV ARRAY RESULTS

Lake potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
FP: FP 1	0	0
OP: OP 1	0	851
OP: OP 2	0	979
OP: OP 3	0	0
OP: OP 4	0	0
Route: Blackstone Parkway	0	404

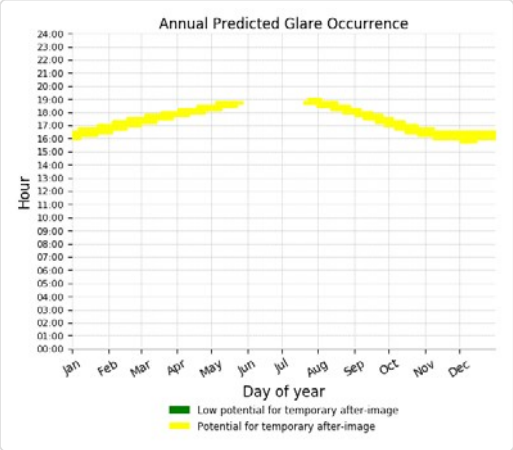
LAKE - RECEPTOR (FP 1)

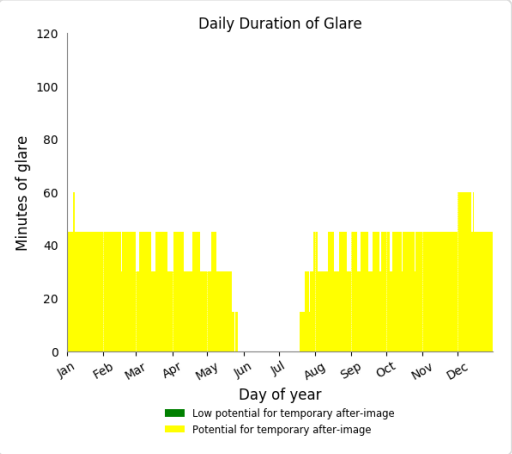
No glare found

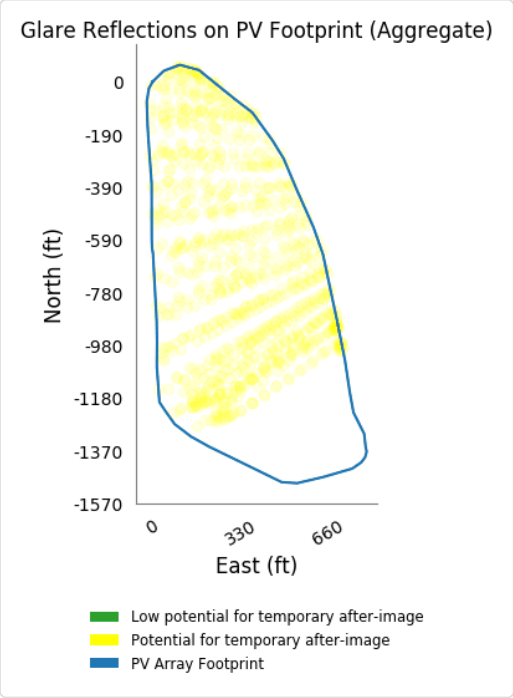
LAKE - OP RECEPTOR (OP 1)

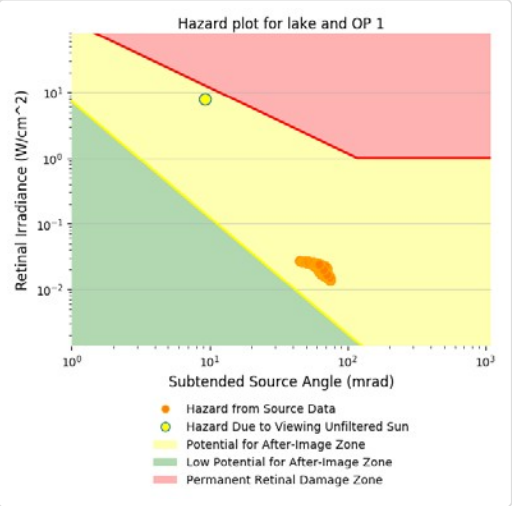
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 851 minutes of "yellow" glare with potential to cause temporary after-image.





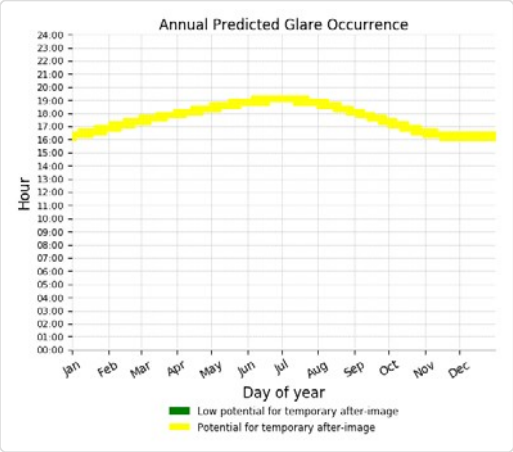


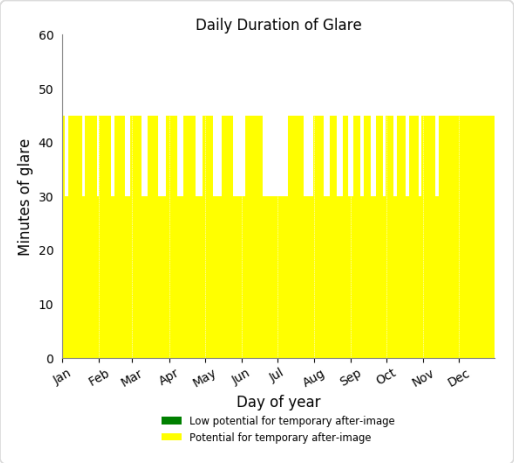


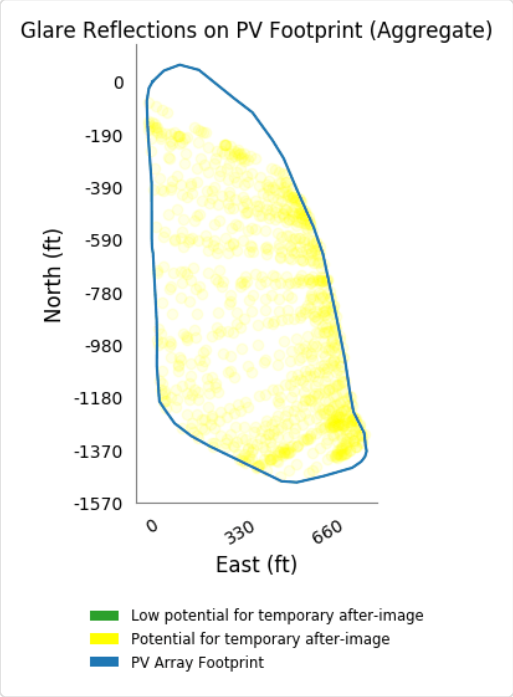
LAKE - OP RECEPTOR (OP 2)

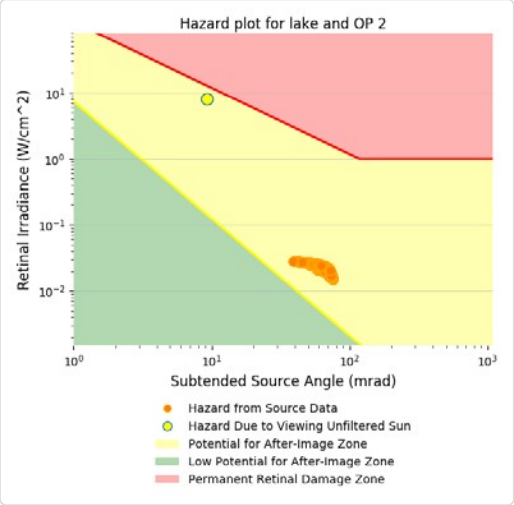
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 979 minutes of "yellow" glare with potential to cause temporary after-image.









LAKE - OP RECEPTOR (OP 3)

No glare found

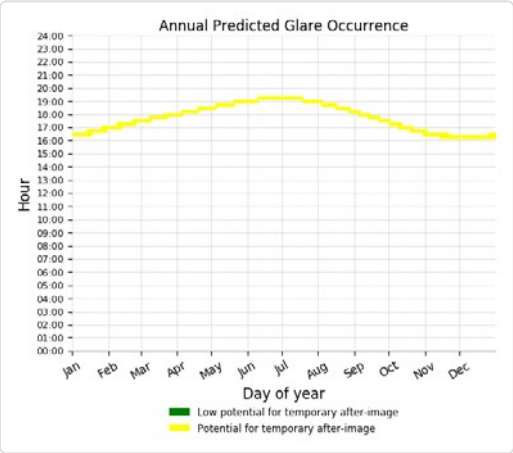
LAKE - OP RECEPTOR (OP 4)

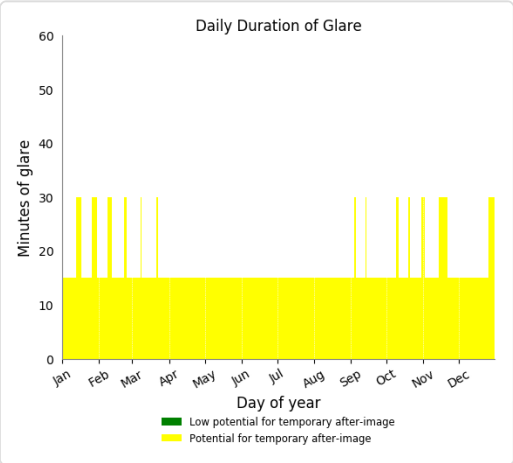
No glare found

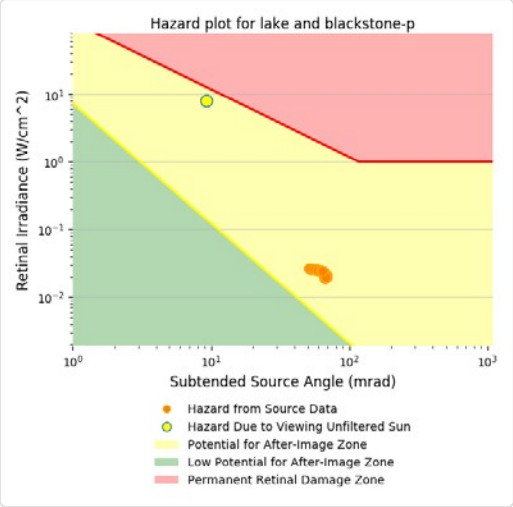
LAKE - ROUTE RECEPTOR (BLACKSTONE PARKWAY)

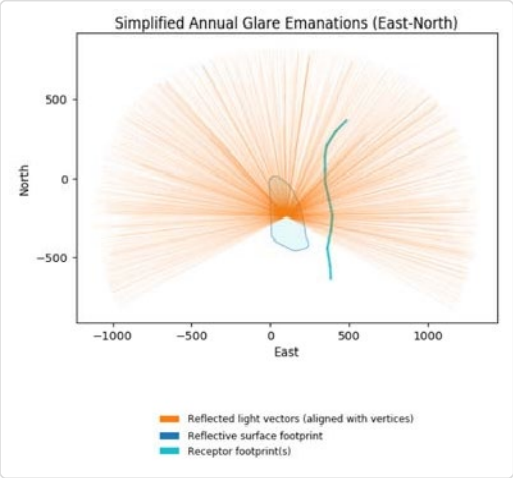
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 404 minutes of "yellow" glare with potential to cause temporary after-image.









Glare vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

PV ARRAY 1 EXISTING POTENTIAL TEMPORARY AFTER-IMAGE

Component	Green glare (min)	Yellow glare (min)
FP: FP 1	0	0
OP: OP 1	0	346
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
Route: Blackstone Parkway	0	0

Predicted energy output: 2,347,000.0 kWh (assuming sunny, clear skies)

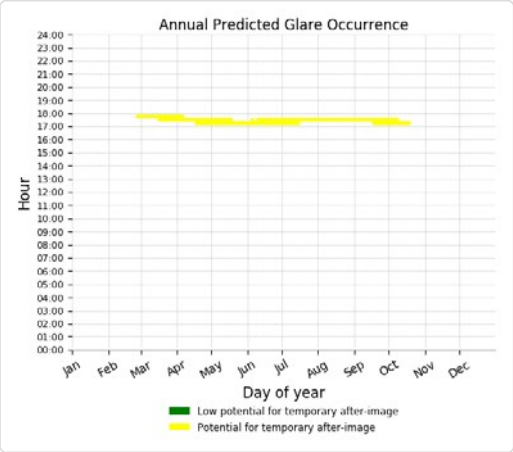
PV ARRAY 1 EXISTING - RECEPTOR (FP 1)

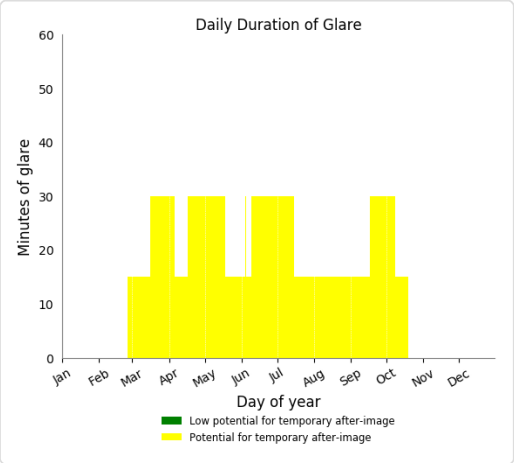
No glare found

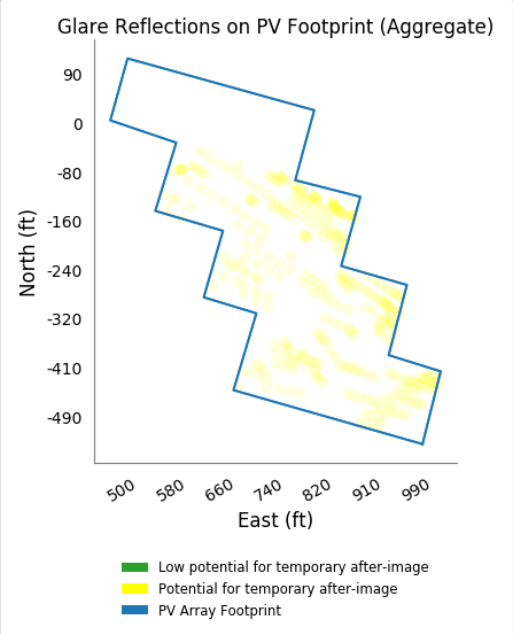
PV ARRAY 1 EXISTING - OP RECEPTOR (OP 1)

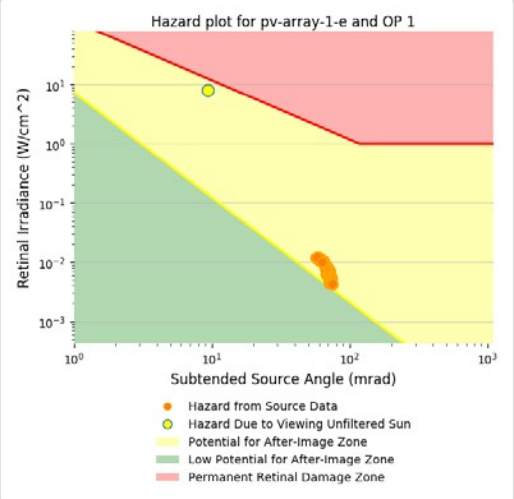
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 346 minutes of "yellow" glare with potential to cause temporary after-image.









PV ARRAY 1 EXISTING - OP RECEPTOR (OP 2)

No glare found

PV ARRAY 1 EXISTING - OP RECEPTOR (OP 3)

No glare found

PV ARRAY 1 EXISTING - OP RECEPTOR (OP 4)

No glare found

PV ARRAY 1 EXISTING - ROUTE RECEPTOR (BLACKSTONE PARKWAY)

No glare found

PV ARRAY 2 NEW NORTH 1 LOW POTENTIAL FOR TEMPORARY AFTER-IMAGE

Predicted energy output: 4,424,000.0 kWh (assuming sunny, clear skies)

Component	Green glare (min)	Yellow glare (min)
FP: FP 1	0	0
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
Route: Blackstone Parkway	20	0

PV ARRAY 2 NEW NORTH 1 - RECEPTOR (FP 1)

No glare found

PV ARRAY 2 NEW NORTH 1 - OP RECEPTOR (OP 1)

No glare found

PV ARRAY 2 NEW NORTH 1 - OP RECEPTOR (OP 2)

No glare found

PV ARRAY 2 NEW NORTH 1 - OP RECEPTOR (OP 3)

No glare found

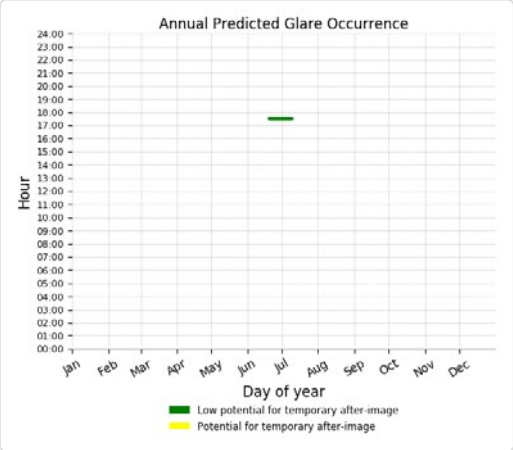
PV ARRAY 2 NEW NORTH 1 - OP RECEPTOR (OP 4)

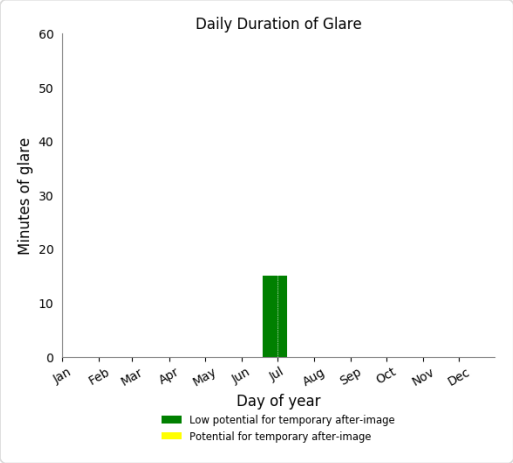
No glare found

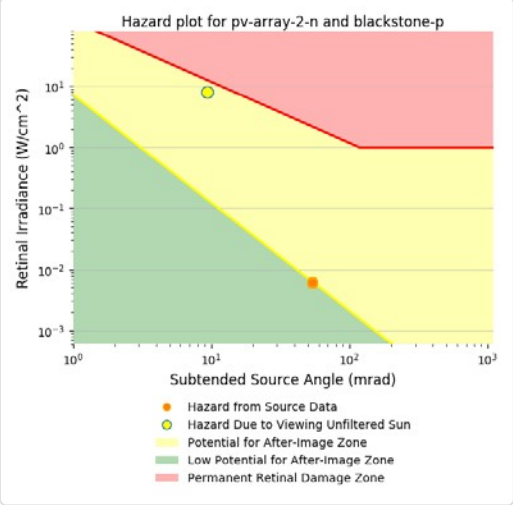
PV ARRAY 2 NEW NORTH 1 - ROUTE RECEPTOR (BLACKSTONE PARKWAY)

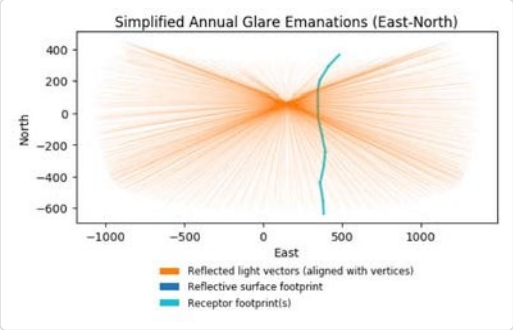
PV array is expected to produce the following glare for receptors at this location:

- 20 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









Glare vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

PV ARRAY 3 NEW NORTH 2

Predicted energy output: 4,431,000.0 kWh (assuming sunny, clear skies)

Component	Green glare (min)	Yellow glare (min)
FP: FP 1	0	0
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
Route: Blackstone Parkway	0	0

PV ARRAY 4 NEW SOUTH 1 POTENTIAL TEMPORARY AFTER-IMAGE

Predicted energy output: 4,422,000.0 kWh (assuming sunny, clear skies)

Component	Green glare (min)	Yellow glare (min)
FP: FP 1	0	0
OP: OP 1	0	17
OP: OP 2	79	371
OP: OP 3	0	0
OP: OP 4	0	0
Route: Blackstone Parkway	0	85

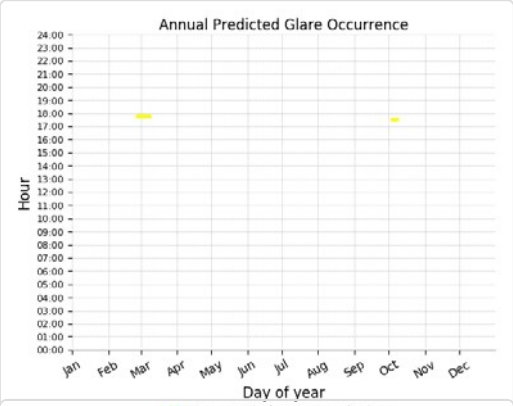
PV ARRAY 4 NEW SOUTH 1 - RECEPTOR (FP 1)

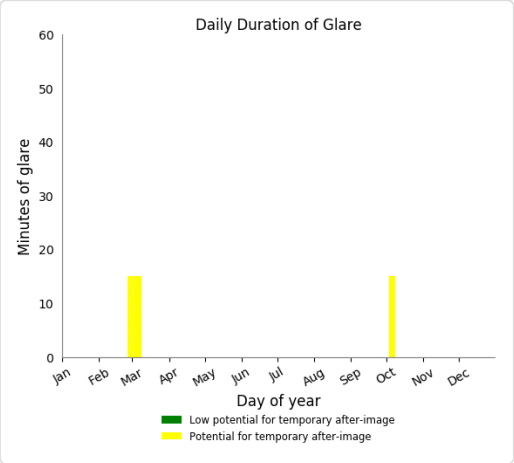
No glare found

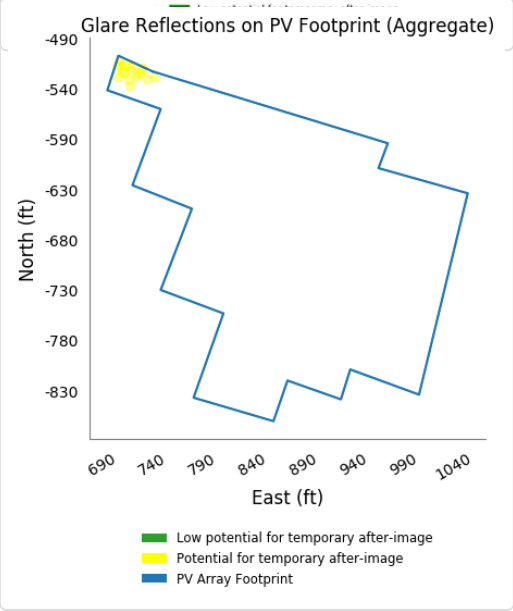
5.2.1 PV ARRAY 4 NEW SOUTH 1 - OP RECEPTOR (OP 1)

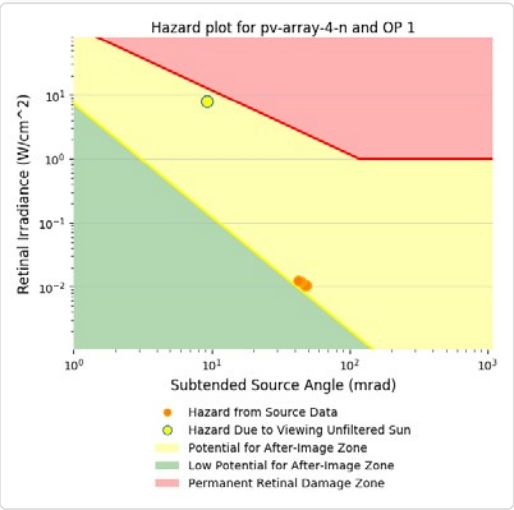
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 17 minutes of "yellow" glare with potential to cause temporary after-image.





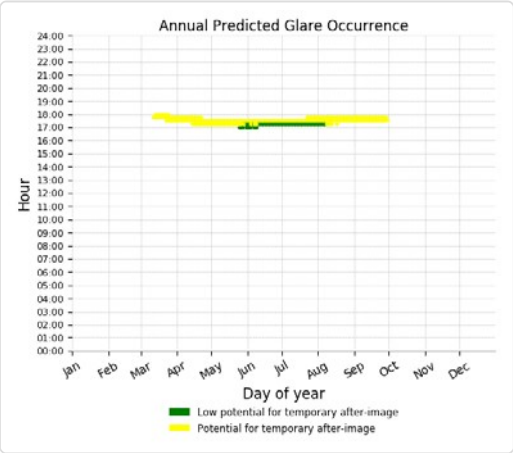


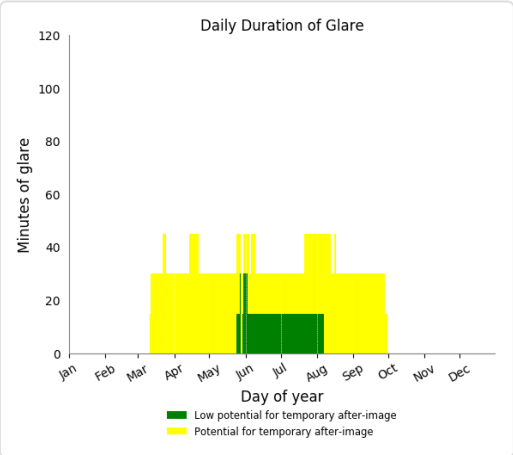


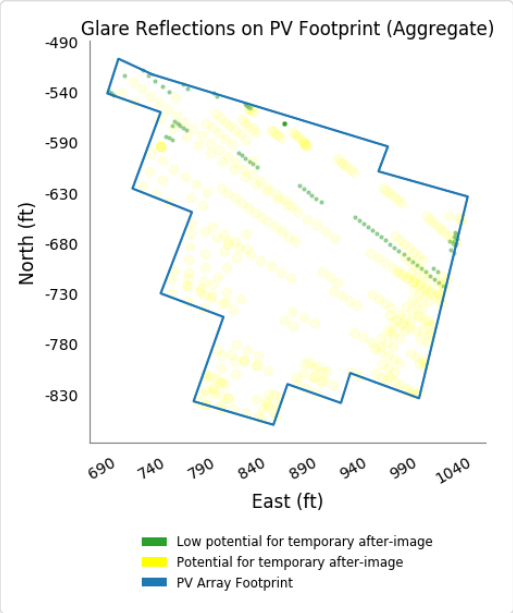
5.2.2 PV ARRAY 4 NEW SOUTH 1 - OP RECEPTOR (OP 2)

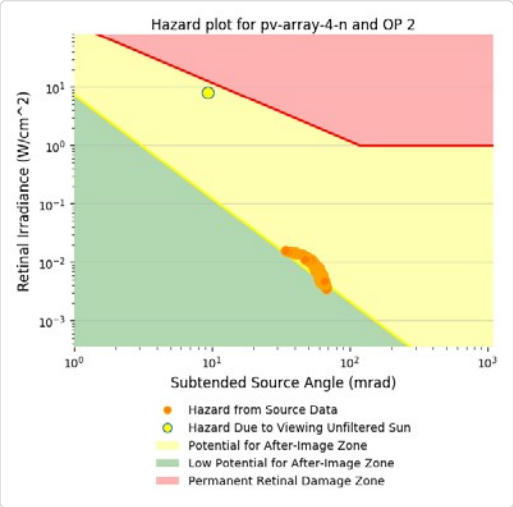
PV array is expected to produce the following glare for receptors at this location:

- 79 minutes of "green" glare with low potential to cause temporary after-image.
- 371 minutes of "yellow" glare with potential to cause temporary after-image.









PV ARRAY 4 NEW SOUTH 1 - OP RECEPTOR (OP 3)

No glare found

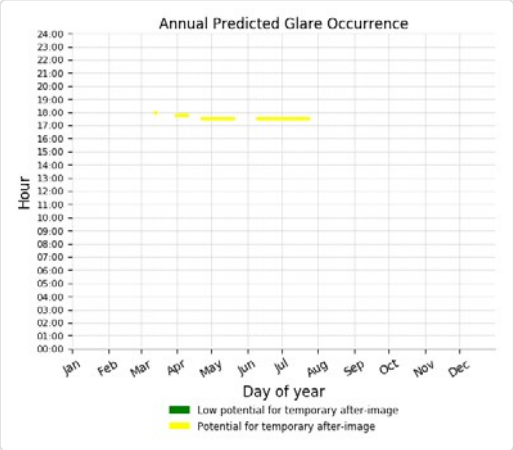
PV ARRAY 4 NEW SOUTH 1 - OP RECEPTOR (OP 4)

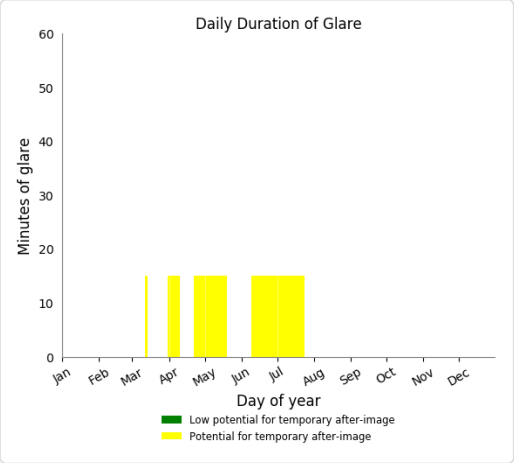
No glare found

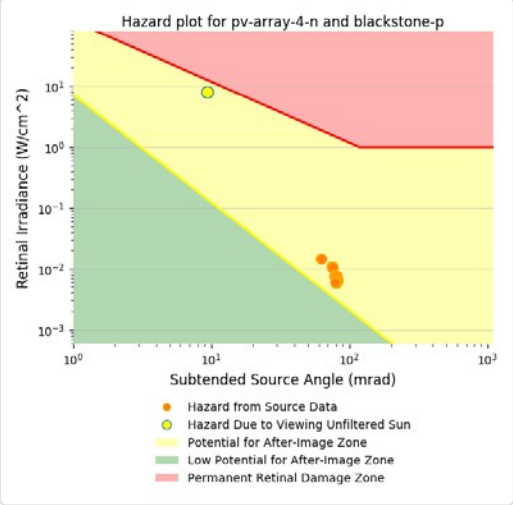
PV ARRAY 4 NEW SOUTH 1 - ROUTE RECEPTOR (BLACKSTONE PARKWAY)

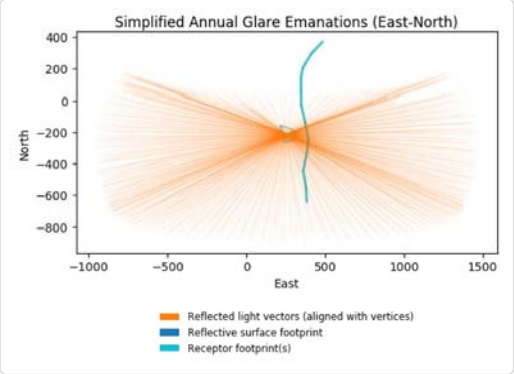
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 85 minutes of "yellow" glare with potential to cause temporary after-image.









Glare vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

PV ARRAY 5 NEW SOUTH 2

Predicted energy output: 4,424,000.0 kWh (assuming sunny, clear skies)

Component	Green glare (min)	Yellow glare (min)
FP: FP 1	0	0
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
Route: Blackstone Parkway	0	0

ASSUMPTIONS

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **User's Manual** for assumptions and limitations not listed here.

APPENDIX B

Air Quality Emission Modeling Results

Deer Creek WWTP - El Dorado-Mountain County County, Annual

DEER CREEK WWTP

El Dorado-Mountain County
County, Annual

1.0 PROJECT CHARACTERISTICS

LAND USAGE

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Commercial	1.00	User Defined Unit	7.50	0.00	0

1.0 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

USER ENTERED COMMENTS & NON-DEFAULT DATA

Deer Creek WWTP - El Dorado-Mountain County County, Annual

Project Characteristics -

Land Use - The new solar PV arrays will occupy about 7.5 acres located within the boundary of the DCWWTP site

Construction Phase - No Demolition, and no architectural coating.

Off-road Equipment - Project Description.

Off-road Equipment - From Project Description.

Off-road Equipment - From Project Description.

Off-road Equipment - From Project Description.

Trips and VMT - Project Description.

Off-road Equipment - Project Description.

Off-road Equipment - Project Description.

Table Name	Column Name	Default Value	New Value
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tblConstructionPhase	PhaseEndDate	6/26/2020	12/13/2019
tblConstructionPhase	PhaseStartDate	7/13/2019	7/15/2019
tblConstructionPhase	PhaseStartDate	8/10/2019	8/12/2019
tblConstructionPhase	PhaseStartDate	6/27/2020	12/14/2020
tblConstructionPhase	PhaseStartDate	8/10/2019	8/26/2019
tblLandUse	LotAcreage	0.00	7.50
tblOffRoadEquipment	HorsePower	247.00	187.00
tblOffRoadEquipment	HorsePower	402.00	132.00
tblOffRoadEquipment	HorsePower	402.00	46.00
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tblOffRoadEquipment	LoadFactor	0.38	0.36

tblOffRoadEquipment	LoadFactor	0.38	0.45
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tblOffRoadEquipment	OffRoadEquipmentType	Welders	Off-Highway Trucks
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tblTripsAndVMT	HaulingTripNumber	0.00	29.00
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tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	25.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	WorkerTripNumber	5.00	24.00
tblTripsAndVMT	WorkerTripNumber	10.00	24.00
tblTripsAndVMT	WorkerTripNumber	13.00	24.00
tblTripsAndVMT	WorkerTripNumber	5.00	24.00
tblTripsAndVMT	WorkerTripNumber	0.00	24.00

2.0 EMISSIONS SUMMARY

OVERALL CONSTRUCTION

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.1176	1.0317	0.7622	1.4900e-003	0.1167	0.0524	0.1691	0.0559	0.0497	0.1056	0.0000	131.4038	131.4038	0.0235	0.0000	131.9907
2020	7.0700e-003	0.0687	0.0732	1.3000e-004	1.8600e-003	3.1900e-003	5.0400e-003	5.0000e-004	2.9300e-003	3.4300e-003	0.0000	11.8702	11.8702	2.9300e-003	0.0000	11.9435
Maximum	**0.1176**	**1.0317**	**0.7622**	**1.4900e-003**	**0.1167**	**0.0524**	**0.1691**	**0.0559**	**0.0497**	**0.1056**	**0.0000**	**131.4038**	**131.4038**	**0.0235**	**0.0000**	**131.9907**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.1176	1.0317	0.7622	1.4900e-003	0.1167	0.0524	0.1691	0.0559	0.0497	0.1056	0.0000	131.4037	131.4037	0.0235	0.0000	131.9905
2020	7.0700e-003	0.0687	0.0732	1.3000e-004	1.8600e-003	3.1900e-003	5.0400e-003	5.0000e-004	2.9300e-003	3.4300e-003	0.0000	11.8702	11.8702	2.9300e-003	0.0000	11.9435
Maximum	**0.1176**	**1.0317**	**0.7622**	**1.4900e-003**	**0.1167**	**0.0524**	**0.1691**	**0.0559**	**0.0497**	**0.1056**	**0.0000**	**131.4037**	**131.4037**	**0.0235**	**0.0000**	**131.9905**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**7-1-2019**	**9-30-2019**	0.5959	0.5959
2	**10-1-2019**	**12-31-2019**	0.5031	0.5031
		Highest	0.5959	0.5959

OVERALL OPERATIONAL

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

2.2 OVERALL OPERATIONAL

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 CONSTRUCTION DETAIL

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/1/2019	7/12/2019	5	10	
2	Grading	Grading	7/15/2019	8/9/2019	5	20	
3	Access Road	Trenching	8/12/2019	8/23/2019	5	10	
4	Solar Array Construction	Building Construction	8/26/2019	12/13/2019	5	80	
5	Paving	Paving	12/14/2020	12/25/2020	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Deer Creek WWTP - El Dorado-Mountain County County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Solar Array Construction	Cranes	1	7.00	231	0.29
Solar Array Construction	Forklifts	1	8.00	89	0.20
Solar Array Construction	Generator Sets	1	8.00	84	0.74
Site Preparation	Rubber Tired Dozers	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Solar Array Construction	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Off-Highway Trucks	1	8.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Solar Array Construction	Welders	1	8.00	46	0.45
Access Road	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Access Road	Off-Highway Trucks	1	8.00	46	0.45
Solar Array Construction	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	24.00	5.00	29.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	24.00	5.00	29.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	24.00	5.00	29.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Access Road	2	24.00	25.00	49.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Solar Array Construction	6	24.00	5.00	29.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 MITIGATION MEASURES CONSTRUCTION

SITE PREPARATION - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0301	0.0000	0.0301	0.0166	0.0000	0.0166	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5700e-003	0.0585	0.0281	5.0000e-005		3.0600e-003	3.0600e-003		2.8200e-003	2.8200e-003	0.0000	4.3708	4.3708	1.3800e-003	0.0000	4.4054
Total	**5.5700e-003**	**0.0585**	**0.0281**	**5.0000e-005**	**0.0301**	**3.0600e-003**	**0.0332**	**0.0166**	**2.8200e-003**	**0.0194**	**0.0000**	**4.3708**	**4.3708**	**1.3800e-003**	**0.0000**	**4.4054**

3.2 SITE PREPARATION - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.6000e-004	5.4500e-003	1.5700e-003	1.0000e-005	2.4000e-004	3.0000e-005	2.7000e-004	7.0000e-005	3.0000e-005	1.0000e-004	0.0000	1.1347	1.1347	2.0000e-005	0.0000	1.1351
Vendor	1.3000e-004	3.3200e-003	1.1600e-003	1.0000e-005	1.5000e-004	3.0000e-005	1.7000e-004	4.0000e-005	3.0000e-005	7.0000e-005	0.0000	0.5866	0.5866	2.0000e-005	0.0000	0.5870
Worker	9.1000e-004	6.1000e-004	6.3500e-003	1.0000e-005	1.4700e-003	1.0000e-005	1.4800e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.3438	1.3438	5.0000e-005	0.0000	1.3449
Total	**1.2000e-003**	**9.3800e-003**	**9.0800e-003**	**3.0000e-005**	**1.8600e-003**	**7.0000e-005**	**1.9200e-003**	**5.0000e-004**	**7.0000e-005**	**5.7000e-004**	**0.0000**	**3.0651**	**3.0651**	**9.0000e-005**	**0.0000**	**3.0671**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0301	0.0000	0.0301	0.0166	0.0000	0.0166	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5700e-003	0.0585	0.0281	5.0000e-005		3.0600e-003	3.0600e-003		2.8200e-003	2.8200e-003	0.0000	4.3708	4.3708	1.3800e-003	0.0000	4.4054
Total	**5.5700e-003**	**0.0585**	**0.0281**	**5.0000e-005**	**0.0301**	**3.0600e-003**	**0.0332**	**0.0166**	**2.8200e-003**	**0.0194**	**0.0000**	**4.3708**	**4.3708**	**1.3800e-003**	**0.0000**	**4.4054**

SITE PREPARATION - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.6000e-004	5.4500e-003	1.5700e-003	1.0000e-005	2.4000e-004	3.0000e-005	2.7000e-004	7.0000e-005	3.0000e-005	1.0000e-004	0.0000	1.1347	1.1347	2.0000e-005	0.0000	1.1351
Vendor	1.3000e-004	3.3200e-003	1.1600e-003	1.0000e-005	1.5000e-004	3.0000e-005	1.7000e-004	4.0000e-005	3.0000e-005	7.0000e-005	0.0000	0.5866	0.5866	2.0000e-005	0.0000	0.5870
Worker	9.1000e-004	6.1000e-004	6.3500e-003	1.0000e-005	1.4700e-003	1.0000e-005	1.4800e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.3438	1.3438	5.0000e-005	0.0000	1.3449
Total	**1.2000e-003**	**9.3800e-003**	**9.0800e-003**	**3.0000e-005**	**1.8600e-003**	**7.0000e-005**	**1.9200e-003**	**5.0000e-004**	**7.0000e-005**	**5.7000e-004**	**0.0000**	**3.0651**	**3.0651**	**9.0000e-005**	**0.0000**	**3.0671**

GRADING - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0212	0.2367	0.1169	2.3000e-004		0.0109	0.0109		9.9800e-003	9.9800e-003	0.0000	21.0623	21.0623	6.6600e-003	0.0000	21.2289
Total	**0.0212**	**0.2367**	**0.1169**	**2.3000e-004**	**0.0655**	**0.0109**	**0.0764**	**0.0337**	**9.9800e-003**	**0.0437**	**0.0000**	**21.0623**	**21.0623**	**6.6600e-003**	**0.0000**	**21.2289**

3.3 GRADING - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.6000e-004	5.4500e-003	1.5700e-003	1.0000e-005	2.4000e-004	3.0000e-005	2.7000e-004	7.0000e-005	3.0000e-005	1.0000e-004	0.0000	1.1347	1.1347	2.0000e-005	0.0000	1.1351
Vendor	2.6000e-004	6.6400e-003	2.3200e-003	1.0000e-005	2.9000e-004	5.0000e-005	3.5000e-004	8.0000e-005	5.0000e-005	1.4000e-004	0.0000	1.1733	1.1733	3.0000e-005	0.0000	1.1740
Worker	1.8100e-003	1.2300e-003	0.0127	3.0000e-005	2.9400e-003	2.0000e-005	2.9600e-003	7.8000e-004	2.0000e-005	8.0000e-004	0.0000	2.6876	2.6876	9.0000e-005	0.0000	2.6899
Total	**2.2300e-003**	**0.0133**	**0.0166**	**5.0000e-005**	**3.4700e-003**	**1.0000e-004**	**3.5800e-003**	**9.3000e-004**	**1.0000e-004**	**1.0400e-003**	**0.0000**	**4.9955**	**4.9955**	**1.4000e-004**	**0.0000**	**4.9990**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0212	0.2367	0.1169	2.3000e-004		0.0109	0.0109		9.9800e-003	9.9800e-003	0.0000	21.0623	21.0623	6.6600e-003	0.0000	21.2289
Total	**0.0212**	**0.2367**	**0.1169**	**2.3000e-004**	**0.0655**	**0.0109**	**0.0764**	**0.0337**	**9.9800e-003**	**0.0437**	**0.0000**	**21.0623**	**21.0623**	**6.6600e-003**	**0.0000**	**21.2289**

GRADING - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.6000e-004	5.4500e-003	1.5700e-003	1.0000e-005	2.4000e-004	3.0000e-005	2.7000e-004	7.0000e-005	3.0000e-005	1.0000e-004	0.0000	1.1347	1.1347	2.0000e-005	0.0000	1.1351
Vendor	2.6000e-004	6.6400e-003	2.3200e-003	1.0000e-005	2.9000e-004	5.0000e-005	3.5000e-004	8.0000e-005	5.0000e-005	1.4000e-004	0.0000	1.1733	1.1733	3.0000e-005	0.0000	1.1740
Worker	1.8100e-003	1.2300e-003	0.0127	3.0000e-005	2.9400e-003	2.0000e-005	2.9600e-003	7.8000e-004	2.0000e-005	8.0000e-004	0.0000	2.6876	2.6876	9.0000e-005	0.0000	2.6899
Total	**2.2300e-003**	**0.0133**	**0.0166**	**5.0000e-005**	**3.4700e-003**	**1.0000e-004**	**3.5800e-003**	**9.3000e-004**	**1.0000e-004**	**1.0400e-003**	**0.0000**	**4.9955**	**4.9955**	**1.4000e-004**	**0.0000**	**4.9990**

ACCESS ROAD - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.1600e-003	0.0117	0.0115	2.0000e-005		7.8000e-004	7.8000e-004		7.2000e-004	7.2000e-004	0.0000	1.3950	1.3950	4.4000e-004	0.0000	1.4060
Total	**1.1600e-003**	**0.0117**	**0.0115**	**2.0000e-005**		**7.8000e-004**	**7.8000e-004**		**7.2000e-004**	**7.2000e-004**	**0.0000**	**1.3950**	**1.3950**	**4.4000e-004**	**0.0000**	**1.4060**

3.4 ACCESS ROAD - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.6000e-004	9.2100e-003	2.6500e-003	2.0000e-005	4.1000e-004	5.0000e-005	4.6000e-004	1.1000e-004	5.0000e-005	1.6000e-004	0.0000	1.9172	1.9172	3.0000e-005	0.0000	1.9180
Vendor	6.5000e-004	0.0166	5.8100e-003	3.0000e-005	7.3000e-004	1.3000e-004	8.7000e-004	2.1000e-004	1.3000e-004	3.4000e-004	0.0000	2.9331	2.9331	8.0000e-005	0.0000	2.9350
Worker	9.1000e-004	6.1000e-004	6.3500e-003	1.0000e-005	1.4700e-003	1.0000e-005	1.4800e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.3438	1.3438	5.0000e-005	0.0000	1.3449
Total	**1.8200e-003**	**0.0264**	**0.0148**	**6.0000e-005**	**2.6100e-003**	**1.9000e-004**	**2.8100e-003**	**7.1000e-004**	**1.9000e-004**	**9.0000e-004**	**0.0000**	**6.1942**	**6.1942**	**1.6000e-004**	**0.0000**	**6.1979**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.1600e-003	0.0117	0.0115	2.0000e-005		7.8000e-004	7.8000e-004		7.2000e-004	7.2000e-004	0.0000	1.3950	1.3950	4.4000e-004	0.0000	1.4060
Total	**1.1600e-003**	**0.0117**	**0.0115**	**2.0000e-005**		**7.8000e-004**	**7.8000e-004**		**7.2000e-004**	**7.2000e-004**	**0.0000**	**1.3950**	**1.3950**	**4.4000e-004**	**0.0000**	**1.4060**

ACCESS ROAD - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.6000e-004	9.2100e-003	2.6500e-003	2.0000e-005	4.1000e-004	5.0000e-005	4.6000e-004	1.1000e-004	5.0000e-005	1.6000e-004	0.0000	1.9172	1.9172	3.0000e-005	0.0000	1.9180
Vendor	6.5000e-004	0.0166	5.8100e-003	3.0000e-005	7.3000e-004	1.3000e-004	8.7000e-004	2.1000e-004	1.3000e-004	3.4000e-004	0.0000	2.9331	2.9331	8.0000e-005	0.0000	2.9350
Worker	9.1000e-004	6.1000e-004	6.3500e-003	1.0000e-005	1.4700e-003	1.0000e-005	1.4800e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.3438	1.3438	5.0000e-005	0.0000	1.3449
Total	**1.8200e-003**	**0.0264**	**0.0148**	**6.0000e-005**	**2.6100e-003**	**1.9000e-004**	**2.8100e-003**	**7.1000e-004**	**1.9000e-004**	**9.0000e-004**	**0.0000**	**6.1942**	**6.1942**	**1.6000e-004**	**0.0000**	**6.1979**

SOLAR ARRAY CONSTRUCTION - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0760	0.6387	0.5035	8.6000e-004		0.0370	0.0370		0.0355	0.0355	0.0000	73.7428	73.7428	0.0141	0.0000	74.0958
Total	**0.0760**	**0.6387**	**0.5035**	**8.6000e-004**		**0.0370**	**0.0370**		**0.0355**	**0.0355**	**0.0000**	**73.7428**	**73.7428**	**0.0141**	**0.0000**	**74.0958**

3.5 SOLAR ARRAY CONSTRUCTION - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.6000e-004	5.4500e-003	1.5700e-003	1.0000e-005	2.4000e-004	3.0000e-005	2.7000e-004	7.0000e-005	3.0000e-005	1.0000e-004	0.0000	1.1347	1.1347	2.0000e-005	0.0000	1.1351
Vendor	1.0300e-003	0.0266	9.2900e-003	5.0000e-005	1.1800e-003	2.1000e-004	1.3900e-003	3.4000e-004	2.1000e-004	5.5000e-004	0.0000	4.6930	4.6930	1.2000e-004	0.0000	4.6960
Worker	7.2500e-003	4.9100e-003	0.0508	1.2000e-004	0.0118	9.0000e-005	0.0118	3.1300e-003	8.0000e-005	3.2100e-003	0.0000	10.7503	10.7503	3.6000e-004	0.0000	10.7594
Total	**8.4400e-003**	**0.0369**	**0.0617**	**1.8000e-004**	**0.0132**	**3.3000e-004**	**0.0135**	**3.5400e-003**	**3.2000e-004**	**3.8600e-003**	**0.0000**	**16.5780**	**16.5780**	**5.0000e-004**	**0.0000**	**16.5906**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0760	0.6387	0.5035	8.6000e-004		0.0370	0.0370		0.0355	0.0355	0.0000	73.7428	73.7428	0.0141	0.0000	74.0957
Total	**0.0760**	**0.6387**	**0.5035**	**8.6000e-004**		**0.0370**	**0.0370**		**0.0355**	**0.0355**	**0.0000**	**73.7428**	**73.7428**	**0.0141**	**0.0000**	**74.0957**

SOLAR ARRAY CONSTRUCTION - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.6000e-004	5.4500e-003	1.5700e-003	1.0000e-005	2.4000e-004	3.0000e-005	2.7000e-004	7.0000e-005	3.0000e-005	1.0000e-004	0.0000	1.1347	1.1347	2.0000e-005	0.0000	1.1351
Vendor	1.0300e-003	0.0266	9.2900e-003	5.0000e-005	1.1800e-003	2.1000e-004	1.3900e-003	3.4000e-004	2.1000e-004	5.5000e-004	0.0000	4.6930	4.6930	1.2000e-004	0.0000	4.6960
Worker	7.2500e-003	4.9100e-003	0.0508	1.2000e-004	0.0118	9.0000e-005	0.0118	3.1300e-003	8.0000e-005	3.2100e-003	0.0000	10.7503	10.7503	3.6000e-004	0.0000	10.7594
Total	**8.4400e-003**	**0.0369**	**0.0617**	**1.8000e-004**	**0.0132**	**3.3000e-004**	**0.0135**	**3.5400e-003**	**3.2000e-004**	**3.8600e-003**	**0.0000**	**16.5780**	**16.5780**	**5.0000e-004**	**0.0000**	**16.5906**

PAVING - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.0000e-003	0.0602	0.0651	1.0000e-004		3.1400e-003	3.1400e-003		2.8900e-003	2.8900e-003	0.0000	8.8593	8.8593	2.8700e-003	0.0000	8.9309
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.0000e-003**	**0.0602**	**0.0651**	**1.0000e-004**		**3.1400e-003**	**3.1400e-003**		**2.8900e-003**	**2.8900e-003**	**0.0000**	**8.8593**	**8.8593**	**2.8700e-003**	**0.0000**	**8.9309**

3.6 PAVING - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3000e-004	4.9500e-003	1.4100e-003	1.0000e-005	2.4000e-004	2.0000e-005	2.6000e-004	7.0000e-005	2.0000e-005	8.0000e-005	0.0000	1.1248	1.1248	1.0000e-005	0.0000	1.1252
Vendor	1.0000e-004	3.0000e-003	1.0200e-003	1.0000e-005	1.5000e-004	2.0000e-005	1.6000e-004	4.0000e-005	2.0000e-005	6.0000e-005	0.0000	0.5841	0.5841	1.0000e-005	0.0000	0.5844
Worker	8.4000e-004	5.5000e-004	5.6900e-003	1.0000e-005	1.4700e-003	1.0000e-005	1.4800e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.3021	1.3021	4.0000e-005	0.0000	1.3031
Total	**1.0700e-003**	**8.5000e-003**	**8.1200e-003**	**3.0000e-005**	**1.8600e-003**	**5.0000e-005**	**1.9000e-003**	**5.0000e-004**	**5.0000e-005**	**5.4000e-004**	**0.0000**	**3.0110**	**3.0110**	**6.0000e-005**	**0.0000**	**3.0126**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.0000e-003	0.0602	0.0651	1.0000e-004		3.1400e-003	3.1400e-003		2.8900e-003	2.8900e-003	0.0000	8.8592	8.8592	2.8700e-003	0.0000	8.9309
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.0000e-003**	**0.0602**	**0.0651**	**1.0000e-004**		**3.1400e-003**	**3.1400e-003**		**2.8900e-003**	**2.8900e-003**	**0.0000**	**8.8592**	**8.8592**	**2.8700e-003**	**0.0000**	**8.9309**

3.6 PAVING - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3000e-004	4.9500e-003	1.4100e-003	1.0000e-005	2.4000e-004	2.0000e-005	2.6000e-004	7.0000e-005	2.0000e-005	8.0000e-005	0.0000	1.1248	1.1248	1.0000e-005	0.0000	1.1252
Vendor	1.0000e-004	3.0000e-003	1.0200e-003	1.0000e-005	1.5000e-004	2.0000e-005	1.6000e-004	4.0000e-005	2.0000e-005	6.0000e-005	0.0000	0.5841	0.5841	1.0000e-005	0.0000	0.5844
Worker	8.4000e-004	5.5000e-004	5.6900e-003	1.0000e-005	1.4700e-003	1.0000e-005	1.4800e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.3021	1.3021	4.0000e-005	0.0000	1.3031
Total	**1.0700e-003**	**8.5000e-003**	**8.1200e-003**	**3.0000e-005**	**1.8600e-003**	**5.0000e-005**	**1.9000e-003**	**5.0000e-004**	**5.0000e-005**	**5.4000e-004**	**0.0000**	**3.0110**	**3.0110**	**6.0000e-005**	**0.0000**	**3.0126**

4.0 OPERATIONAL DETAIL - MOBILE

MITIGATION MEASURES MOBILE

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TRIP SUMMARY INFORMATION

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Commercial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

TRIP TYPE INFORMATION

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Commercial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

FLEET MIX

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Commercial	0.512962	0.041542	0.225677	0.140684	0.035619	0.007151	0.016044	0.009270	0.001580	0.001207	0.005638	0.000826	0.001801

ENERGY DETAIL

Historical Energy Use: N

MITIGATION MEASURES ENERGY

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

ENERGY BY LAND USE - NATURALGAS

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

ENERGY BY LAND USE - NATURALGAS

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

ENERGY BY LAND USE - ELECTRICITY

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 ENERGY BY LAND USE - ELECTRICITY

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 AREA DETAIL

MITIGATION MEASURES AREA

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

AREA BY SUBCATEGORY

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 WATER DETAIL

MITIGATION MEASURES WATER

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

WATER BY LAND USE

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 WATER BY LAND USE

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 WASTE DETAIL

MITIGATION MEASURES WASTE

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

WASTE BY LAND USE

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 OPERATIONAL OFFROAD

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 STATIONARY EQUIPMENT

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 VEGETATION

APPENDIX C

Mitigation Monitoring and Reporting Program

Mitigation Monitoring and Reporting Program

El Dorado Hills Wastewater Treatment Plant Solar Array Expansion Project

Prepared for:

El Dorado Irrigation District

AECOM

May 2019

Mitigation Monitoring and Reporting Program

El Dorado Hills Wastewater Treatment Plant Solar Array Expansion Project

Prepared for:

El Dorado Irrigation District
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60600041

May 2019

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MITIGATION MONITORING AND REPORTING PROGRAM

INTRODUCTION

In accordance with the California Environmental Quality Act (CEQA), El Dorado Irrigation District (EID) has prepared an initial study/mitigated negative declaration (IS/MND) that identifies environmental impacts related to the implementation of the Solar Expansion Project at El Dorado Hills Wastewater Treatment Plant (Project). The IS/MND also identifies mitigation measures that will be implemented to reduce potential significant impacts to a less-than-significant level.

Section 21081.6 of the California Public Resources Code and Sections 15091(d) and 15097 of the CEQA Guidelines require public agencies "to adopt a reporting and monitoring program for changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment." A mitigation monitoring and reporting program (MMRP) is required for the Project because the IS/MND identifies potentially significant and significant adverse impacts related to construction and operation activities, and mitigation measures have been identified to mitigate those impacts.

EID is the lead agency that must adopt the MMRP for the Project. Adoption of this MMRP will occur along with approval of the Project.

PURPOSE OF MITIGATION MONITORING AND REPORTING PROGRAM

This MMRP has been prepared to ensure that all required mitigation measures are implemented and completed according to schedule and maintained in a satisfactory manner during the construction and operation of the Project. The MMRP may be modified by EID during project implementation, as necessary, in response to changing conditions or other refinements. Table 1 has been prepared to assist the responsible parties in implementing the MMRP. The table identifies individual mitigation measures, monitoring/mitigation timing, the person and/or agency responsible for implementing the measure, and space to confirm implementation of the mitigation measures. The numbering of mitigation measures follows the numbering sequence found in the IS/MND.

ROLES AND RESPONSIBILITIES

EID is responsible for taking all actions necessary to implement the mitigation measures according to the specifications provided for each measure and for demonstrating that the action has been successfully completed. EID, at its discretion, may delegate implementation responsibility or portions thereof to a licensed contractor or other designated agent as long as EID maintains final responsibility for ensuring that the actions are taken.

EID will be responsible for overall administration of the MMRP and for verifying that EID staff members and/or the construction contractor has completed the necessary actions for each measure. EID will designate a project manager to oversee the MMRP. The project manager will be charged with the following duties:

- Ensure that routine inspections of the construction site are conducted by appropriate EID staff; check plans, reports, and other documents required by the MMRP; and conduct report activities

- Serve as a liaison between EID and other responsible agencies (where necessary), and the construction contractor regarding mitigation monitoring issues
- Complete forms and maintain reports and other records and documents generated by the MMRP
- Coordinate and ensure that corrective actions or enforcement measures are taken, if necessary

The responsible party for implementation of each item will identify the staff members responsible for coordinating with EID on the MMRP.

MITIGATION MONITORING PLAN

EID will verify the implementation of mitigation measures. Table 1 provides a template that EID can use to monitor and report on the implementation of mitigation measures.

The column categories identified in Table 1 are described below:

- **Mitigation Measure**—This column lists the mitigation measures according to the number in the IS/MND and provides the text of the mitigation measures identified in the IS/MND.
- **Party Responsible for Monitoring**—This column identifies the entity responsible for complying with the requirements of the mitigation measure.
- **Timeframe for Implementation**—This column lists the time frame in which the mitigation will take place.
- **Monitoring Compliance**—This column is for verifying compliance. The column is to be dated and initialed by the project manager or his/her designee, based on the documentation provided by the construction contractors, its agents (qualified individuals), or through personal verification by EID.

Table 1
Summary of Mitigation Measures, Responsible Parties, and Timing

Mitigation Measure	Party Responsible for Monitoring	Timeframe for Implementation	Monitoring Compliance (Provide Name/Date)
3.4 Biological Resources			
BIO-1: Implement Mitigation Measure GEO-1.	EID and contractor	Submittal of the State Construction General Permit NOI and SWPPP before the start of construction activities and implementation throughout Project construction	
BIO-2: Preconstruction Surveys for Special-Status Species. EID shall implement the following mitigation measures for special-status species: **Swainson's Hawk:** Preconstruction surveys for Swainson's hawk nests shall be conducted within a minimum of ¼ mile of the project site to verify the absence of this species. In the unforeseen event that the species is present and was not located during previous surveys, appropriate seasonal avoidance measures shall be implemented to avoid construction within ¼ mile of an active nest during the nesting period. **Western Burrowing Owl:** Preconstruction surveys for burrowing owls shall be conducted within 250 feet of the project site to verify the absence of this species. In the unforeseen event that the species is present and was not located during previous surveys, appropriate seasonal avoidance and habitat protection measures shall be implemented in agreement with California Department of Fish and Game. **Migratory Birds:** Preconstruction surveys for migratory bird nesting would be conducted to identify active nests in the project area. In the unforeseen event that active nest(s) area identified within or near the project site, no construction activities shall be allowed to occur within 100 feet of the nest(s) until the young have fledged. **Raptors:** Preconstruction raptor surveys shall be conducted to determine if active nests are present in the project area. If active nests are identified, then no construction activities shall be allowed to occur within 250 to 500 feet of the nests until the young have fledged.	EID and contractor.	Surveys completed before construction begins.	

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Mitigation Measure	Party Responsible for Monitoring	Timeframe for Implementation	Monitoring Compliance (Provide Name/Date)
3.5 Cultural Resources			
CUL-1: Address Previously Undiscovered Historic Properties and Archaeological Resources. EID shall implement the following measure to reduce or avoid impacts on undiscovered historic properties and archaeological resources. If interested Native American Tribes provide information demonstrating the significance of the project location and tangible evidence supporting the determination the site is highly sensitive for prehistoric archaeological resources, EID will retain a qualified archaeologist 1) monitor for potential prehistoric archaeological resources during initial ground disturbing activities, 2) prepare a worker awareness brochure, and 3) invite tribal representatives to review the worker awareness brochure. If buried or previously unidentified historic properties or archaeological resources are discovered during project activities, all work within a 100-foot radius of the find shall cease. EID shall retain a professional archaeologist meeting the Secretary of the Interior's Professional Standards for Archaeologists to assess the discovery and recommend what, if any, further treatment or investigation is necessary for the find. Interested Native American Tribes will also be contacted. Any necessary treatment/investigation shall be developed with interested Native American Tribes providing recommendations and shall be coordinated with the State Historic Preservation Officer and Reclamation, if necessary, and shall be completed before project activities continue in the vicinity of the find.	EID	Prior to or during construction	
CUL-2: Avoid Potential Effects on Undiscovered Burials. EID shall implement the following measures to reduce or avoid impacts related to undiscovered burials. In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, all potentially damaging ground-disturbance in the area of the burial and a 100-foot radius shall halt and the El Dorado County Coroner shall be notified immediately. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, then Federal laws governing the disposition of those remain would come into effect. Specifically, the Native American Graves Protection and Repatriation Act (NAGPRA), Pub L. 101-601, 25 U.S.C. 3001 et seq., 104 Stat. 3048 requires federal agencies and institutions that receive federal funding to return Native American cultural items to lineal descendants and culturally affiliated Indian Tribes and Native	EID and contractor	Prior to and during construction	

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Hawaiian organizations. Cultural items include human remains, funerary objects, sacred objects, and objects of cultural patrimony. NAGPRA also has established procedures for the inadvertent discovery of Native American cultural items on Federal or Tribal lands, which includes consultation with potential lineal descendants or Tribal officials as part of their compliance responsibilities. California law recognizes the need to protect Native American human burials, skeletal remains, and items associated with Native American burials from vandalism and inadvertent destruction. EID shall ensure that the procedures for the treatment of Native American human remains contained in California Health and Safety Code Sections 7050.5 and 7052 and Public Resources Code Section 5097 are followed.			
3.7 Geology and Soils			
GEO-1: Prepare and Implement a Stormwater Pollution Prevention Plan. EID or its approved construction contractor shall prepare and implement a stormwater pollution prevention plan (SWPPP) that contains Best Management Practices (BMPs) to reduce impacts from erosion and sedimentation during grading and excavation. This SWPPP shall conform to all erosion control standards adopted by EID. The SWPPP would be prepared to support application for a General Construction Activity Stormwater Permit (General Permit) from the Regional Water Quality Control Board (RWQCB). To obtain coverage under the State of California General Permit, a Notice of Intent (NOI) shall be filed with the RWQCB, in conjunction with submittal of an NOI to the RWQCB prior to ground-disturbing activities.	EID and contractor	Submittal of the State Construction General Permit NOI and SWPPP before the start of construction activities and implementation throughout Project construction	
3.9 Hazards and Hazardous Materials			
HAZ-1: Prepare and Implement a Construction Site Health and Safety Plan. EID or its approved construction contractor shall prepare and implement a construction site health and safety plan prior to ground-disturbing activities. The plan shall require that construction-related hazardous materials and hazardous wastes be staged and stored away from stream channels and steep banks to prevent these materials from entering surface water in the event of an accidental release and liquid materials be stored in existing EDH WWTP facilities with containment features to prevent accidental release. This includes materials staged for expected use, materials in equipment and vehicles, and waste materials. The construction site health and safety plan shall be implemented throughout the duration of construction.	EID and contractor	During construction activities, as appropriate	

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Summary of Mitigation Measures, Responsible Parties, and Timing

Mitigation Measure	Party Responsible for Monitoring	Timeframe for Implementation	Monitoring Compliance (Provide Name/Date)
3.10 Hydrology and Water Quality			
HYD-1: Implement Mitigation Measure GEO-1.	EID and contractor	Submittal of the State Construction General Permit NOI and SWPPP before the start of construction activities and implementation throughout Project construction	
3.13 Noise			
NOI-1: Implement Noise-Reducing Construction Practices. The EID or its approved construction contractor shall implement the following measures during construction activities, where construction occurs within 400 feet of a sensitive receptor, to avoid and minimize construction noise effects on sensitive receptors: ► All construction equipment shall be equipped with noise-reduction devices, such as mufflers, to minimize construction noise; and all internal combustion engines will be equipped with exhaust and intake silencers, in accordance with manufacturers' specifications. ► The use of bells, whistles, alarms, and horns shall be restricted to safety warning purposes only. ► Mobile and fixed construction equipment (e.g., compressors and generators), construction staging and stockpiling areas, and construction vehicle routes shall be located at the most distant point feasible from noise-sensitive receptors. ► The EID or its approved construction contractor shall ensure that all heavy trucks are properly maintained and equipped with noise-control (e.g., muffler) devices, in accordance with manufacturers' specifications, at each work site during project construction, to minimize construction traffic noise effects on sensitive receptors.	EID and contractor	Throughout project construction	
3.17 Transportation/Traffic			
TRANS-1: Prepare and Implement a Traffic Control Plan. Before construction begins, EID and/or its approved construction contractor shall prepare and implement a traffic control plan to minimize construction-related traffic safety hazards on the affected roadways, and ensure adequate access for emergency responders. EID and/or its approved construction contractor shall coordinate development and implementation of this plan with jurisdictional agencies (e.g., El Dorado County), as appropriate. The traffic control plan shall, at minimum: ► Include a discussion of work hours, haul routes, work area delineation, traffic control, and flagging. ► Determine the need to require workers to park personal vehicles at an approved staging area and take only necessary project vehicles to the work sites. ► Develop and implement a plan for notifications and a process for communication with	EID and contractor	Before and during construction activities, as appropriate	

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Summary of Mitigation Measures, Responsible Parties, and Timing

Mitigation Measure	Party Responsible for Monitoring	Timeframe for Implementation	Monitoring Compliance (Provide Name/Date)
affected residents and landowners before the start of construction. Public notification would include posting of notices and appropriate signage of construction activities. The written notification would include the construction schedule, the exact location and duration of activities on each street (e.g., which roads/lanes and access points/driveways would be blocked on which days and for how long), and contact information for questions and complaints. Provide notification to the public advising them of alternative routes that may be available to avoid delays. ► Ensure that appropriate warning signs are posted in advance of construction activities, alerting bicyclists and pedestrians to any closures of non-motorized facilities. ► Provide notification to administrators of police and fire stations, ambulance service providers, and recreational facility managers of the timing, location, and duration of construction activities, and the locations of detours and lane closures, where applicable. Maintain access for emergency vehicles in and/or adjacent to roadways affected by construction activities at all times. ► Require the repair and restoration of affected roadway rights-of-way to their original condition after construction is completed.			

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